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ABORIGINAL REMAINS IN THE CHAMPLAIN VALLEY

G. H. PERKINS

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ABORIGINAL REMAINS IN THE CHAMPLAIN VALLEY

By G. H. PERKINS

ALTHOUGH all the objects described and figured on the following pages were collected on the eastern side of the Champlain valley and might be considered as representing the archeology of western Vermont, nevertheless they also accurately exhibit the usual specimens collected on the opposite side of Lake Champlain, for, while some minor differences may perhaps be discovered, as a whole, collections gathered on either side of the lake are practically identical. This is not true if we go too far from Lake Champlain. East of the Green mountains or west of the Adirondacks, things are not the same, and the Indian implements, etc., are more distinctly Algonquian on the one hand and Iroquoian on the other. In the Champlain valley itself the objects found appear to be more characteristically Iroquois than Algonquian, but still there is in some degree a mixture of the work of both these peoples.

It is doubtful if there were long occupied, still less permanent, settlements on either shore of Lake Champlain or very near it for many years before the advent of the European. The whole region appears to have been a great hunting ground, and the lake itself a thoroughfare for centuries, and the Iroquois seem to have dominated the area more than others. So far as Vermont is concerned, there was probably alternation, now Algonquian and now Iroquois, the former being the original possessors of the land, then for more than a century from 1540, or somewhat earlier, to 1640 the Iroquois held it, and then after 1640 the Algonquians in some way regained possession and held it until the white man finally took it for his own.

While various objects of aboriginal manufacture are still found from time to time, they are becoming rare, and such collections as that now in the Museum of the University of Vermont, which includes about ten thousand specimens from western Vermont and that equally important gathered by Dr D. S. Kellogg on the west side of the valley, can no longer be obtained. Occasionally, however, a valuable find is made, as in the case of one of the jars shown on plate XXXVI and most of the bone objects on plate XXXIV, which were collected at what appears to have been a much-used camp discovered a few years ago.

Although for the greater part not very unlike such specimens found elsewhere in the United States, it may not be without interest that we examine some of the more characteristic objects that have been found in the immediate vicinity of Lake Champlain.

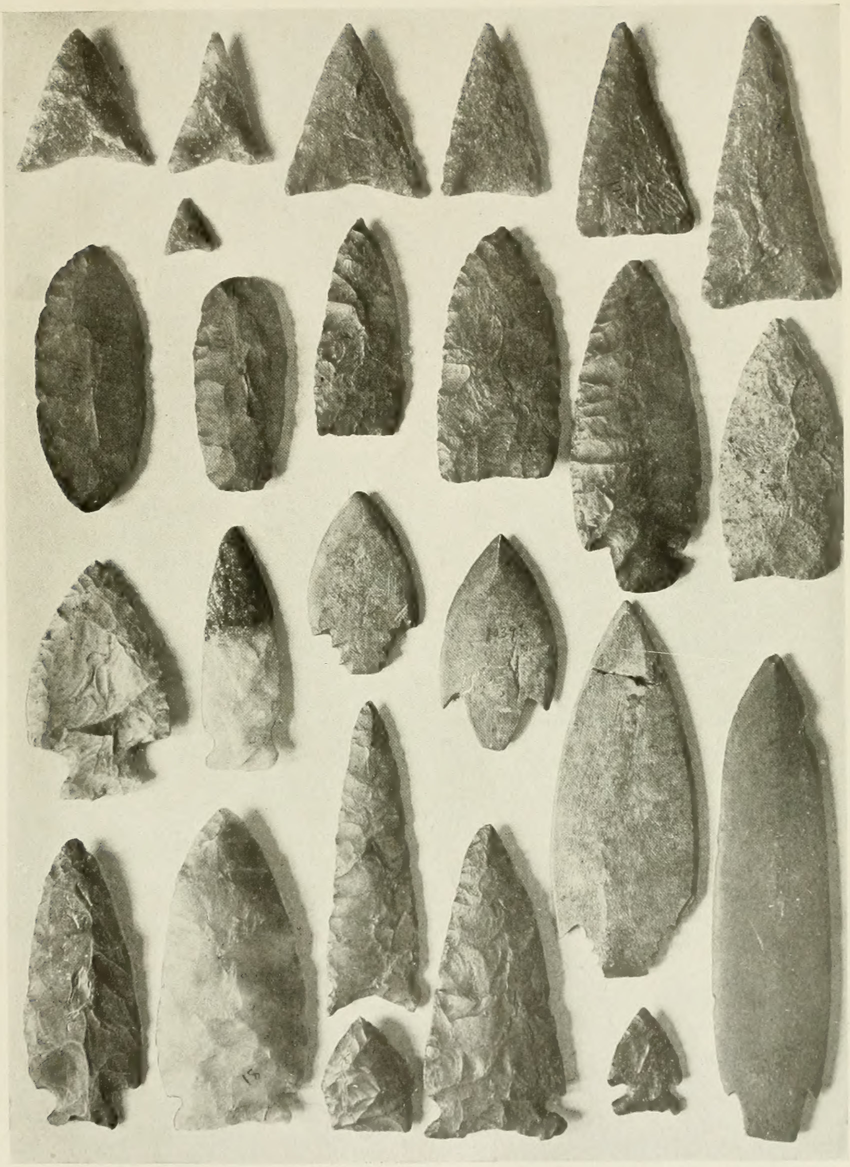
Archeologists will not fail to note the close resemblance of many of the specimens illustrated on the accompanying plates to those figured on the plates which illustrate Dr Beauchamp's Bulletins on the Aboriginal Implements, etc., of New York. There are, as will be noticed later, some very marked differences between our collections and those described in the New York Bulletins, but there are also many noticeable resemblances.

It is not intended to present in this paper a complete account of the Indian objects from Champlain valley, but in this and in an article to follow most of those which are at all characteristic of the region will be shown.

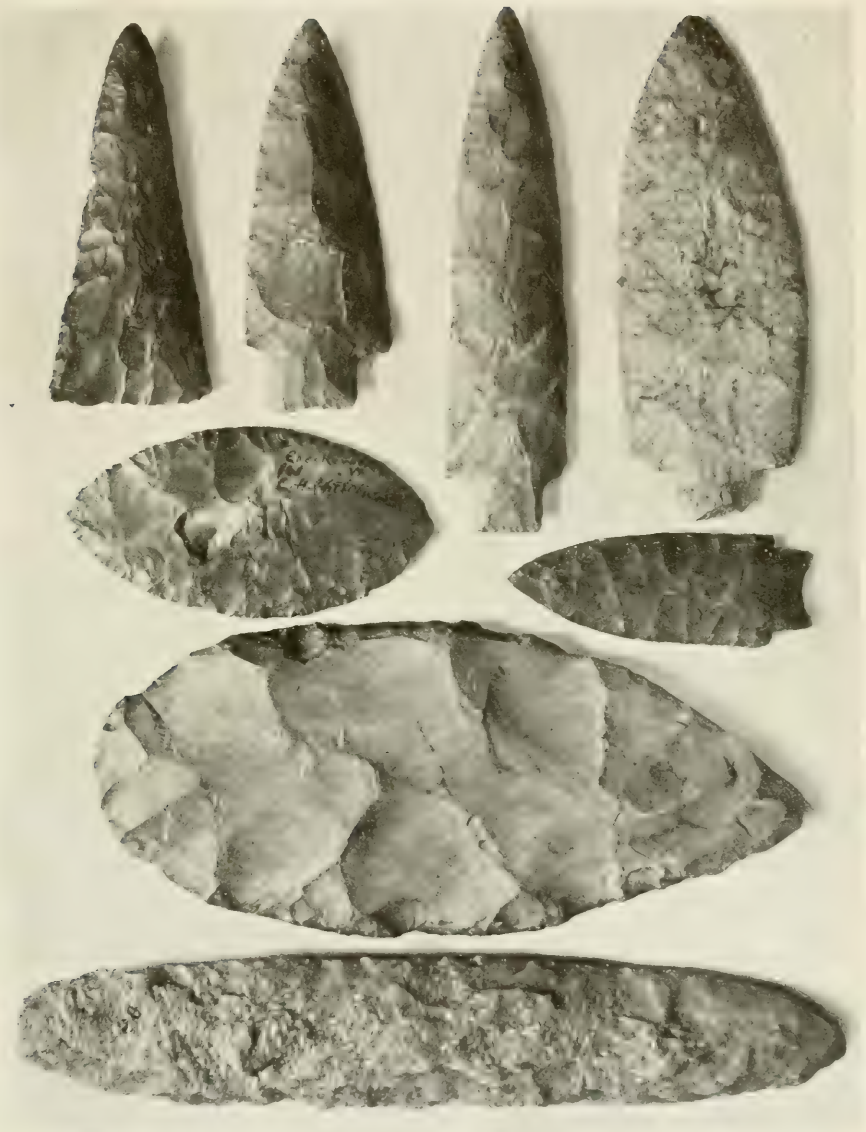
Chipped Objects

Chipped points made from some kind of quartz, quartzite, hornstone, or other highly silicious material are here, as everywhere, the most abundant examples of aboriginal work. While localities have been found in which there were great quantities of flakes, chips, etc., showing the site of an ancient workshop, no large deposits or caches of flaked implements have ever been brought to light. Nor are the objects found in this region so large on the whole as those of the West and South, or at least none are found of as large proportions as are the great chipped implements that have been discovered elsewhere. And the same might be said of most classes of stone objects. As will be seen, a very few comparatively large leaf-shaped objects have been found in this region, but they are exceedingly rare.

With no intention of presenting our finest or rarest specimens,



STONE IMPLEMENTS FROM CHAMPLAIN VALLEY. (ABOUT ONE-HALF ACTUAL SIZE)



STONE IMPLEMENTS FROM CHAMPLAIN VALLEY. (SIZE 9:4)

but rather such as may be considered typical of the average of our collections, I have selected and photographed those shown on the accompanying plates.

When examining these plates it should always be borne in mind that all the figures are reduced, usually more than half. The series at the top of plate XXIX, the simple, unstemmed and unbarbed triangles, are examples of what is by far our most common form. While these triangular points may be made of a great variety of materials, by far the larger part are made of a gray quartzite which occurs in ledges in different parts of northern Vermont. This quartzite is always gray, but the shade may vary from light, translucent, and rather pretty stone to that which is very dark, or it may sometimes be of a yellowish tinge. This latter does not seem to have been very much liked by the arrowpoint makers, for we find only very rude and clumsy specimens made from it.

Though used more than any other material, for the smaller specimens, this was only rarely used in the making of large pieces. Other forms of the smaller points, knives, etc., are also, though less often, made from the common quartzite; but the stemmed and barbed specimens are more often made from darker and more compact hornstone or some such material. For some of these, white or clear quartz was used; but for some reason these were far less often chosen than in southern New England. White quartz is common in large masses in the ledges not far east of Lake Champlain, but it was rarely chosen for any sort of implement.

Plate XXX shows a few of our largest chipped specimens. They are all well made, though not of the best. The four specimens at the top of the plate show a type that is quite abundant, and endlessly varied in form and material. Most are slender, though some are wider, like that at the right, and a few are broadly triangular. Some of the finer and more slender forms are six or even eight inches long and only an inch or a little more in width.

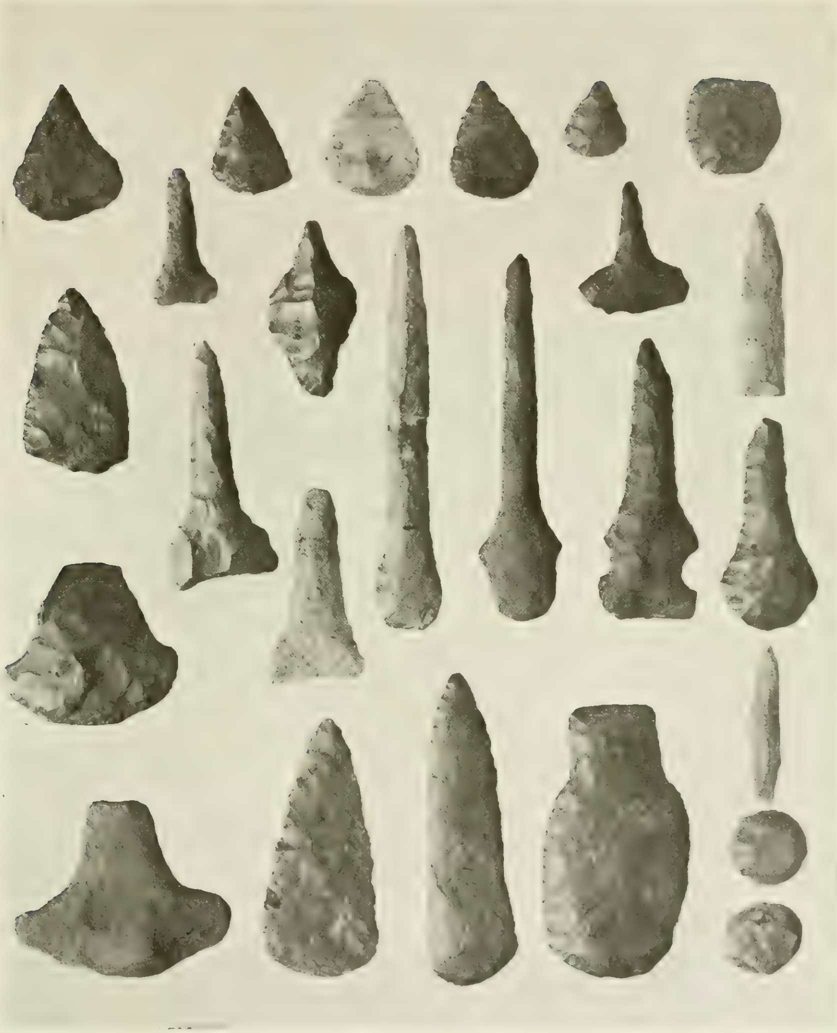
The long implement at the bottom of the plate is made of the common gray quartzite. It has fairly well finished edges, and is ten inches long by two inches in greatest width. The leaf-shaped implement — knife or spade — above it is a very rare form in this region. The specimen figured is eight inches and a half long and four inches wide. One or two similar specimens are still larger than that figured.

Scrapers of many different shapes are common among our chipped specimens. Several of these are shown on plate XXXI. The sharply beveled edge is so characteristic of this class of implements that there is little difficulty in recognizing them whatever may be the shape.

The small, triangular forms seen at the top of plate XXXI are perhaps more abundant than other forms in the Champlain valley. Some of these are small, most of not large size, but now and then one of large proportions was made. Following down the left side of the plate, across the bottom and up on the right side, one may see examples of our most usual forms of scrapers. It is quite possible that the circular objects, such as are shown at the lower right corner, were not always scrapers, but sometimes were used in games, for there are accounts by early writers of games which the aborigines played in which such discs of stone were used. Many other forms are found among our scrapers. Now and then one appears to have been made either from an old arrowpoint, one angle of which was broken off and made into a scraper, or else the scraper edge was made at first and the implement shaped like some of the points. In the triangular points the base was sometimes beveled to be useful as a scraper. In other cases the portion remaining after the pointed end had broken off was beveled to a scraper edge.

This repairing or remaking old, broken, or worn implements in order that they might serve in other capacity is not uncommon in all classes of these objects.

The drills shown on plate XXXI will be readily recognized by their peculiar form. Others less slender than those shown on the plate are found, and also those that are ruder and more clumsy ; but the figures show the more common specimens. Drills are spoken of by many writers as rare in the various localities under consideration, but in the Champlain valley they are quite abundant. As noticed, some are rude, but others are among the very best examples we have of skilful chipping — such specimens, for example, as those shown near the center of the plate. The longest of these measures four inches, and the one at the right is nearly as long.



STONE IMPLEMENTS FROM CHAMPLAIN VALLEY. (ONE-HALF ACTUAL SIZE)

The triangular points which have been mentioned previously lend themselves easily to transformation into drills, and it is not uncommon to find what at first appears to be simply an ordinary triangular point which when more closely examined is found to be a drill, one of the angles having been fashioned to serve as a boring point. It is difficult to understand how some of the very slender drills could have resisted efficient use. It seems likely that they would break if much pressure were put upon them ; nevertheless, they have evidently been considerably used, as the polished end shows. Very often these triangular drills are longer at the boring point than at the others.

In addition to the various chipped implements mentioned above, there are a few specimens made in this way that belong to classes usually made by hammering and grinding. On plate XXXIII, at the bottom, is shown a finely made celt of hornstone. The surface appears to have been rubbed somewhat after the chipping or flaking had been completed. The edge is plainly rubbed. Altogether this is the best example of this kind of chipping that has been found in this region, and, as the figure shows, it is a fine specimen. Rather large axes flaked from more or less flat plates of quartz of the form of the common grooved axes occur now and then. In place of the groove, these are notched on each edge. They are very rude.

Slate Knives

Although resembling the chipped points or knives in their general form, the four smooth objects shown at the lower right portion of plate XXIX are very different in material, and they were ground, not chipped.

These represent a class of implements which are found on both sides of Lake Champlain. They are all made from slate, red, purple, or drab, such as occurs abundantly in this region. The use of these objects is rather problematical. They are almost always well made ; the surface is smooth and almost polished, the edges are sharp and do not indicate that the tool had been severely treated. And yet the material is not very hard, and is very brittle, and some of the specimens (knives ?) are slender. One is nine inches long and an inch and a half at the widest part ; it would easily break, and there are other specimens nearly as fragile. The longest shown on plate XXIX measures four inches and a half. The greater number are three or four inches long and of varying width. All are stemmed, and usually the stem is notched on each side. In the collection at Burlington there are more than thirty of these objects, and a smaller number in the State collection at Montpelier.

Dr Beauchamp has published a plate[1] on which are figured ten of these slate knives, and the following statement of their distribution is given (page 65): "In some parts of Canada the . . . knives are about as common as in New York, being most abundant on both sides of Lake Ontario. They have not been reported east of Lake Champlain, except in its immediate vicinity, with the exception of one in Maine, nor do they reach more than halfway southward to the Pennsylvania line. In fact here they are rarely found far away from the larger lakes and streams tributary to the St. Lawrence."

GOUGES

Although by no means confined to the Champlain valley, the gouges may be regarded as very characteristic of this region, for unless I am in error, they are found here more abundantly and in greater variety than elsewhere.

None of our specimens, not even the best "banner stones," are more beautifully finished or of handsomer material than some of the best of our gouges. As is true of other objects, there are all grades of rudeness or elegance in these. As a class, however, the gouges are more carefully shaped and more perfectly finished than most other implements. Indeed, some are so finely finished, of such attractive material, and so apparently unused that it is very difficult to conjecture for what purpose they were made. One of these is shown in the longest on plate XXXII. This is as perfect in all respects except a recent break at the top, as when it left the maker. If this, and others like it, were of hard stone, it would be more easy to think of some use to which they could have been put. They are of only moderately hard talcose slate, often of a greenish drab color, and could not be used for any hard work without very evi-

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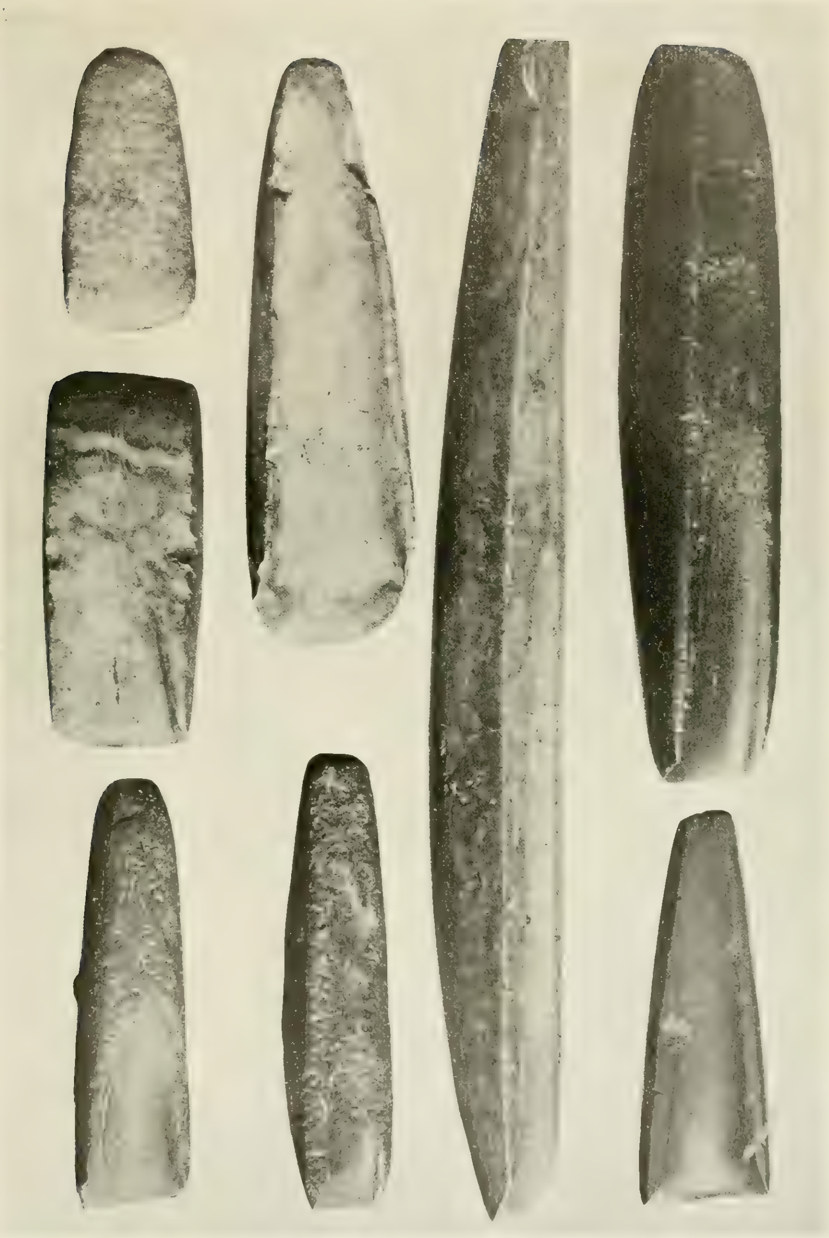
[1] *Bulletin 18, N. Y. State Museum.*



STONE OBJECTS FROM CHAMPLAIN VALLEY. (LESS THAN ONE-HALF ACTUAL SIZE)

dent abrasion, and yet most of them do not show anything of the sort. The surface is not only smooth, but well polished, and the edge is sharp.

While, as has been noticed, great variety occurs in the shape of the gouges in general, these are long, slender, flat or slightly concave on the upper side and strongly carinate on the other, so that a cross-section has the form of a narrow, sharply pointed arch. The groove may, as in the figure, extend throughout the whole length, or only part way. The specimen figured is fourteen inches and a half long and rather more than an inch and a half across the edge. There are other gouges that are several inches longer, but by far the larger number are much shorter. Perhaps six or eight inches may be taken as the average length of the gouges of this region.

These finer examples are usually longer. Evidently great care and labor were expended in fashioning such gouges as the long one figured, and they must have been made for some important purpose, but what that purpose was I cannot imagine. Diligent search in various old accounts which early explorers have left us has failed to bring any satisfactory explanation of these singular objects.

But however these were used, there can be no doubt as to the use of most of the gouges. By far the larger portion are of hard stone, well fitted to endure rough service. As the figures on plate XXXII show, the groove is sometimes short and shallow, sometimes deep and long. In a few it is triangular, as in the middle specimen on the left. This also is an example of a sort of chisel-gouge. In these, of which we have a number of specimens, one end is hollowed and curved to form a regular gouge edge, while the other is straight and beveled to form a chisel. More rarely both ends are hollowed, and, of course, in these the groove runs from end to end. As to the use for which the gouges were usually intended, there have been numerous suggestions, but none is entirely satisfactory.

In one of his accounts Champlain speaks of seeing Indians on the coast of Maine making canoes, dug-outs, by charring a properly prepared log and scraping out the burned portions, then charring again, and thus by alternate charring and scraping they accomplished the desired end. Water poured over portions of the wood that were to be retained confined the burning, which was done with hot stones, to the part to be hollowed.[1]

No theory of the use of these gouges so well explains the excellent condition in which most of them are found as does the one that they were used chiefly in excavating or cutting where wood had been more or less charred. Among considerably more than a hundred of these specimens that have been found in this region, by far the greater number do not show much, if any, effect of use.

CELTS

Plate XXXIII shows a few of the many forms of celts that have been found in the Champlain valley. As a class ruder than the gouges, some are as well finished as they could be, and are really elegant specimens. Generally of hard material and evidently made for service rather than for ornament, they form an interesting and conspicuous part of our collections.

I do not think that the celts of this region exhibit any particular characters which can distinguish them from those of other localities. We have none so large as those that have been found elsewhere. Rarely does one exceed a foot in length, and the majority are not more than five to eight inches long. Some are very small, in length not more than two or three inches. Some of these little celts are finely made and of various shapes. While most of these implements are at least fairly well made, there are some that are very coarse and clumsy. These are usually made from a large quartz pebble.

BONE IMPLEMENTS

Stone objects and bits of earthenware have been collected in the Champlain valley for many years, but articles made of bone have been exceedingly rare, especially on the eastern side of the lake.

Some years ago the writer mentioned[2] two or three specimens of this kind. Up to that time these were all that had been found in Vermont, and although more had been collected on the western side of the lake the entire number was very small.

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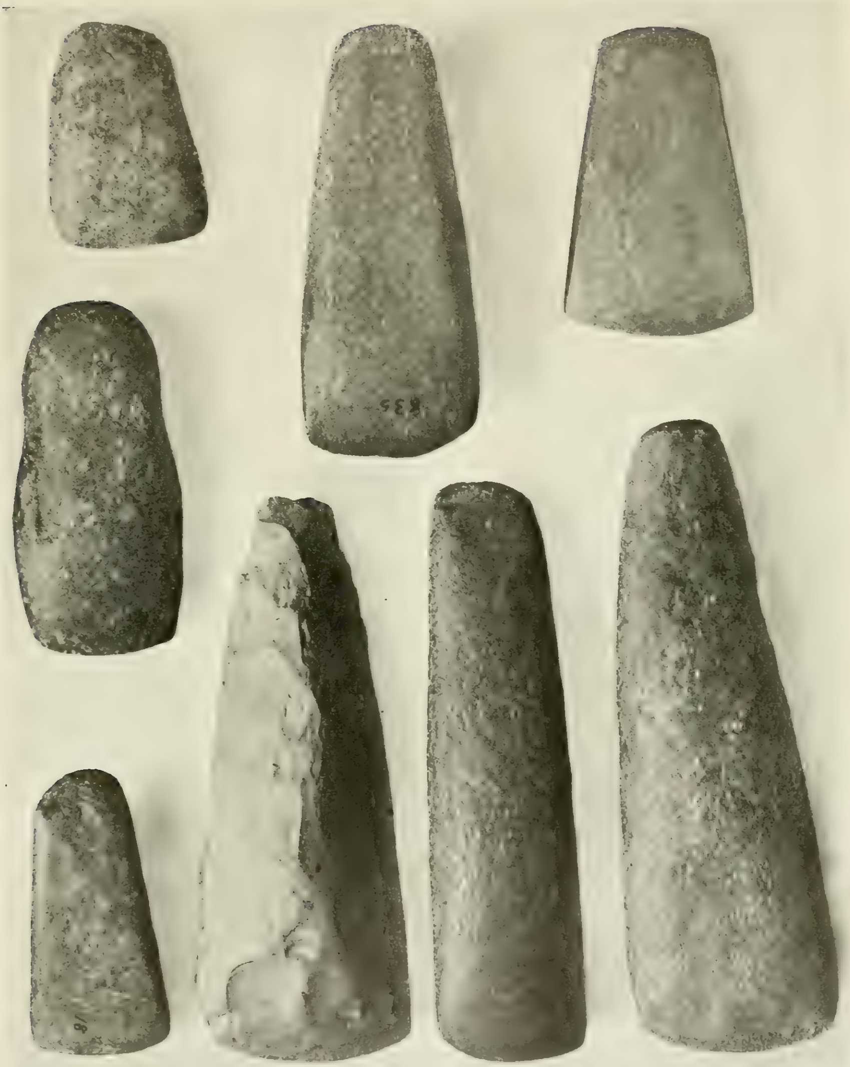
[1] For further account of these implements, see the article by the writer in *American Naturalist*, XV, 425.

[2] *Science*, Oct. 7, 1892.



STONE IMPLEMENTS FROM CHAMPLAIN VALLEY. LESS THAN ONE-HALF ACTUAL SIZE

Within a few years was found what appears to have been the site of a long-occupied camp. The site is on the bank of a large creek that flows into Malletts bay, one of the largest of the numerous deep indentations found here and there along both shores of Lake Champlain. A camp here would have been admirably situated, being in the midst of what must have been excellent hunting and fishing, and absolutely invisible from not only the main lake, but from most parts of the bay. The bank is composed mostly of a stiff clay, and in this many bone implements as well as many more scattered bones of bear, deer, elk, wolf, beaver, etc., have been found as the reward of very careful and diligent search by Mr D. B. Griffin, who for years has collected them. All of the bone specimens figured on plate XXXIV, except that at the bottom and one just above the shell beads, were obtained at this place within two or three years. With the bone objects there have been found many fragments of earthenware, mostly suggestive of Iroquoian origin, and numerous stone implements. One nearly entire, though much decayed human skeleton, and bones from others, were also found. It is impossible to doubt that the Indians of this region used bone freely, but it seems to have been for the greater part unable to withstand exposure, and therefore to have disappeared.

The locality referred to is the only one in Vermont from which more than one or two bone objects have been obtained.

A glance at the plate will show that most of the objects figured are very similar to those found elsewhere and in widely distant localities. Indeed the world over, the simpler forms of bone implements, both prehistoric and recent, are very much the same as to form. Still there are often at least a few specimens found in each locality that are peculiar.

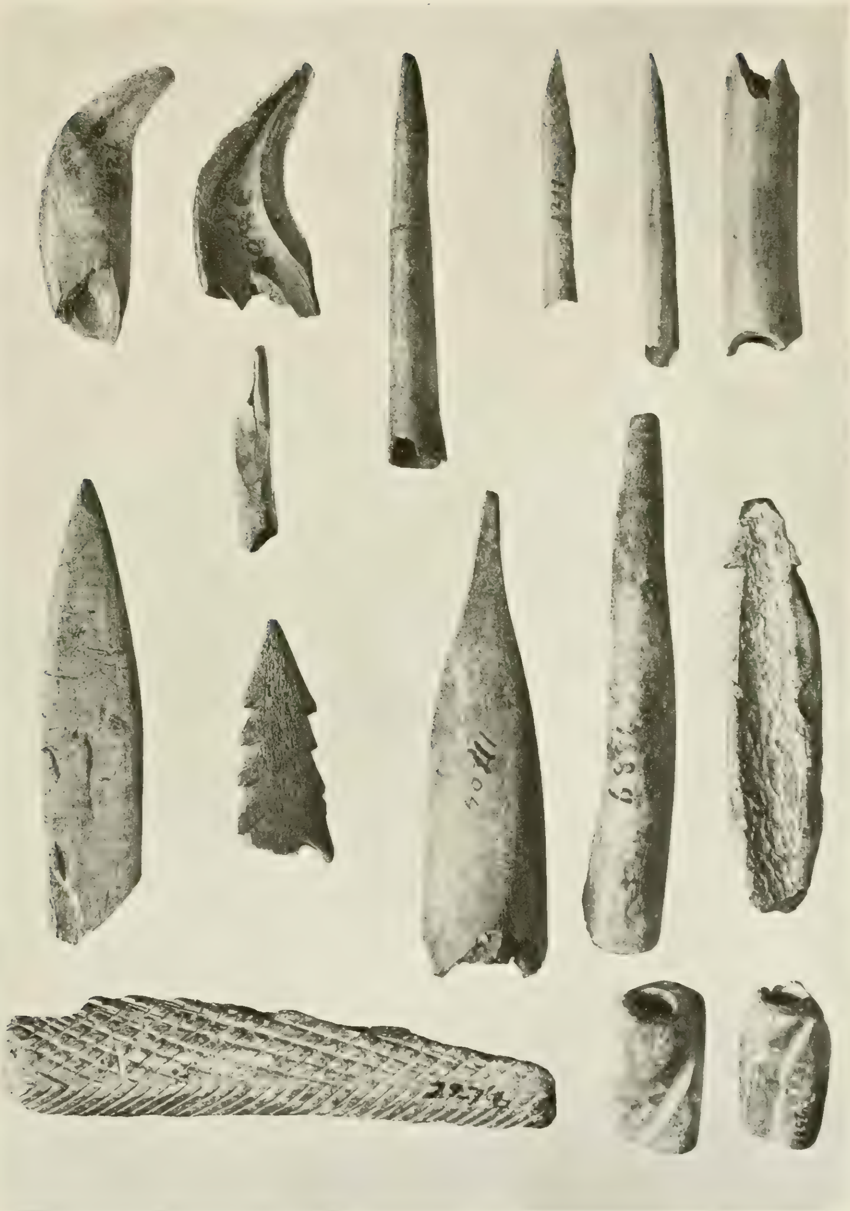
The teeth shown at the top of the plate, and others not figured, are of this sort. Their shape is somewhat unlike any that I have seen from other places. The two canines from a bear are worked with considerable care to sharp edges. As the figures show, one tooth is worked obliquely about half-way between the point and the root, while the other is worked throughout its length. Both are well polished, and finished with care. The beaver incisor below is not as well shown as it might be, but close examination of the reduced figure will reveal oblique working similar to that in the first.

Other teeth, especially beaver incisors, were found, and one of these latter was worked so that only half remained, as in the second bear's tooth. Numerous unworked teeth of bear and beaver, as well as entire jaws of several species of mammals, were obtained. The originals of these, as of others on this plate, are more than twice as large as the figures. Of the three points at the right of the teeth the first and third are made from tines from deer horn. The middle one is part of the humerus of some bird.

The specimen at the upper right corner is unique, and, like some of the points, may have been used for decorating pottery. As the figure shows, the upper end is broken; the lower is cut to form three points separated by curved edges. The barbed point below the beaver tooth and that at the extreme right remind one of the common fishing spears of the Eskimo. They are made from one of the long-bones of the deer, — ulna, humerus, or some such bone, — as also are the two flat points. All are smooth and well made. Many tines from deer antlers are found showing but little evidence of being worked, but careful examination reveals some notching or cutting, enough to prove that they are not merely chance fragments.

Near Swanton, in the northern part of the Champlain valley, many very interesting and often peculiar specimens have been found. At this place the singular fragment shown at the bottom of plate XXXIV was obtained. At each end it is somewhat rounded, and the lower edge seems to be intact; but the upper is so badly broken that it is impossible to determine the original form. Still less can the use for which this specimen was made be known or conjectured. It evidently was intended to be ornamental, and perhaps this was all. The original is three inches and a half long, and about three-fourths of an inch at the widest part. The material is quite chalky, and appears to have been buried a long time.

Another very interesting specimen, found also in Swanton, is a bone mask. This appears to be of Indian origin, but it is not chalky, nor does it seem to be very ancient. Yet it resembles very



BONE IMPLEMENTS FROM CHAMPLAIN VALLEY. (ABOUT THREE-FOURTHS ACTUAL SIZE)

closely some of the bone and earthenware masks figured by Dr Beauchamp. The specimen is nearly an inch and a half long and rather less in width. It is cut from a piece of femur, and the medullary cavity is shown by a deep groove extending through the rear side. The face has a prominent nose, full lips, distinct eyes, and is well carved.

SHELL

Objects of shell are exceedingly rare here — only a few beads, most of them taken from some very ancient graves in Swanton, and which have been described elsewhere.[1] Two of these are figured at the lower right corner of plate XXXIV. About a dozen of these, some larger than those figured, have been collected, and a large number of the little *Marginella coniodalis* which were bored lengthwise so that they could be strung. Besides these a number of smaller cylindrical shell beads have been found.

These beads all are made from shells not found so far north. Additional evidence of Southern trade is furnished by several pieces of coral. These are straight bits of a branch from the common *Madrepora*, a few inches long and rubbed smooth. Presumably these were simply ornaments.

EARTHENWARE

During the last few years notable additions have been made to our collections of earthenware. Of the three entire jars which are in the University Museum at Burlington, and which are all the Vermont jars that have been preserved, only one has been obtained recently; the other two were found, as will be noticed later, more than seventy years ago. But many fragments, some of them large, — in a few cases forming, when brought together, nearly the whole of the jars from which they came, — have been discovered in the sands and clays of this region, and mostly in the immediate neighborhood of the lake. The material of which our pottery was made — a mixture, and often a rather coarse mixture, of quartz and feldspar with sometimes little flakes of mica held together by more or less clay — rendered it very liable to destruction when buried and subjected to moisture, and especially to freezing and thawing. The earthenware of western Vermont and eastern New York is practically identical in the patterns in which the jars are adorned and also in the general form and material. The simple, globular form seen in the lower part of those figured on plate XXXVI is universal. As the illustration shows, the upper part may be circular or compressed, as in the smaller of the jars figured, into a rectangular form, or, as in another, a hexagon, or even more elaborately shaped as was evidently the case in the small jar a portion of which is shown in the left portion of figure *a*, plate XXXVI. Many are contracted, as in the smallest of the three jars and as shown by several of the fragments of rims on the same plate, so that a neck is formed, varying much in different specimens. This may have been designed to facilitate the attachment of a band by which the jar could be hung, and holes found more rarely in some jars, such as those shown in the fragment on which may be indistinctly seen lettering in white, were probably made for the same purpose.

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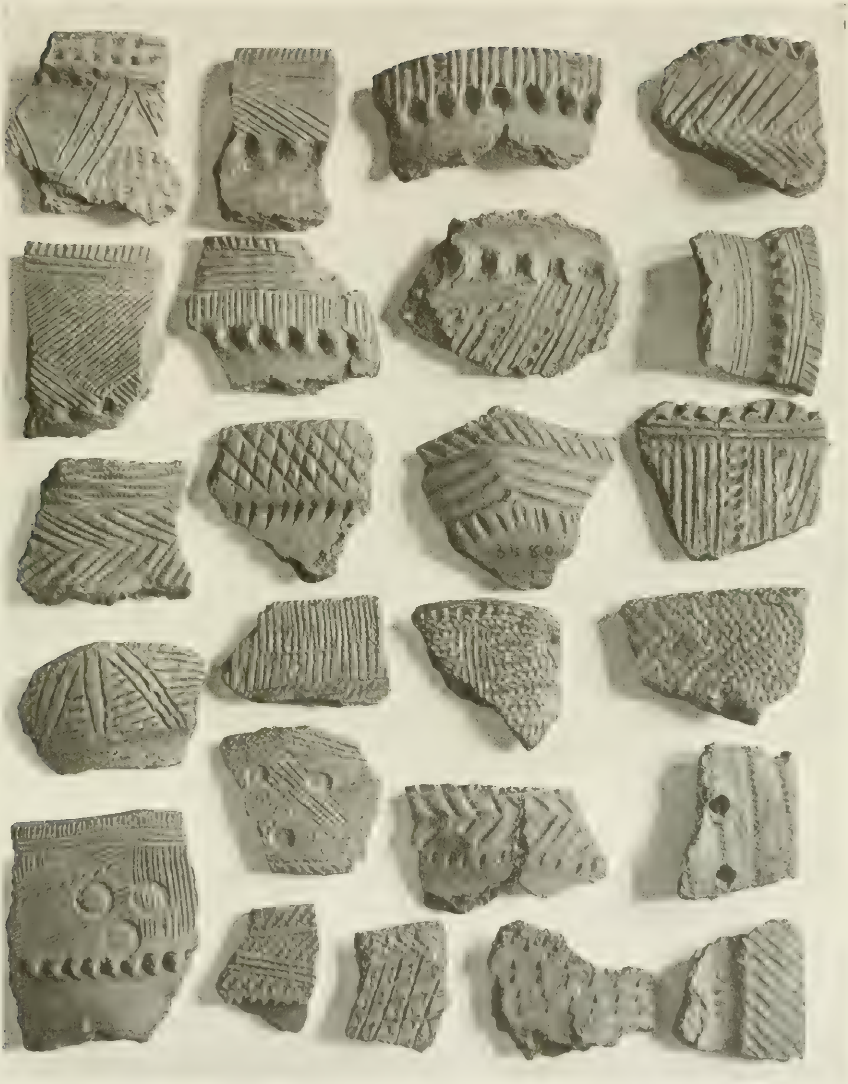
[1] *Proc. A. A. A. S.*, Portland Meeting, 1873, p. 76.

While the earthenware of that part of New York adjoining Lake Champlain is like that of western Vermont, the pottery found in most parts of the state, that is, west of the Adirondacks, presents important differences. In the Champlain valley there is entire absence of any animal or human effigy, while these are not uncommon in the region west of the Adirondacks.

Dr Beauchamp says that such faces modeled in clay and attached to the jars are not uncommon in the pottery of the Mohawk and the Onondaga, but they are less common in that of the Seneca. No specimens ornamented with figures in relief are found here. As plates XXXV and XXXVI show, all our pottery is decorated with sunken or incised lines, etc. Lines, arranged in all sorts of grouping and in every direction, form the most common ornament; but dots, circles, rings, crescents, zigzags, triangles, squares, etc., in well-nigh endless variety, are associated with lines or groups of lines. All this may be seen much better by examining the figures than can be described by any written account.

The two plates here given might easily be multiplied many times without exhausting the great number of varieties of pattern found on the potsherds of this region. Many of our jars, as is evident from the fragments that remain, were marked or stamped over most



POTTERY FRAGMENTS FROM CHAMPLAIN VALLEY

of the upper half, and some even on the inside, sometimes a third of the surface from the rim down, but this is unusual. Most, if decorated at all inside, are marked only about the upper edge. By far the larger number, however, are ornamented only about the outside of the rim, as in the two jars, *b* and *c*, on plate XXXVI. Figure *a* of this plate shows fragments of twelve jars, and from these a fairly good understanding of the various patterns may be gained. Of these the pieces in the foreground are probably Iroquois, while the four in the background are more likely to be Algonquian. Still it may be that all are Iroquoian.

It is a fortunate fact that the most highly ornamented portion of our jars is also that which was thicker and more enduring than the rest, so that we have a much more complete knowledge of the artistic skill of their makers than would otherwise be possible.

Naturally the color and hardness of the earthenware depended on the length and heat of the burning. All are black inside, but the outside varies considerably, being drab, dark red, black or gray, light or dark brown, etc. Nowhere is there evidence that any color was used in decoration.

While much of the decoration was evidently made by the use of blunt points, very likely of bone such as the implements figured on plate XXXIV, it is also evident that some of the impressions were made with stamps.

As compared with pottery from the mounds of the Mississippi valley and from the Southwest, that found in the Champlain valley is most of it coarse and often rude.

The granite, quartz, or whatever stone was used, mixed with clay, was not always crushed to extreme fineness, but angular fragments are plainly seen in many broken bits. Sometimes the paste was all of it very fine, and usually, though not invariably, the jar was coated both outside and inside with a fine clay, producing a smooth surface.

Our Eastern pottery is in most examples much thicker and less hard than the Western; nor do we find so great variety in shape. Even if the Algonquian and Iroquois women had been able to fashion jars as thin and as varied in form as were the women of the mound-builders and the Pueblos, they could not have decorated their work as did the latter, for the often deep and boldly drawn lines, or whatever figures were employed, could not have been placed on any thin-walled vessels without making them too fragile.

As will be noticed, plate XXXV shows fragments which are mostly from the rims of various jars. These figures, with one or two exceptions, give the more common varieties found here. All are reduced to somewhat less than half the size of the originals (exactly as 4 : 9). Figure *a* of plate XXXVI shows large fragments from the rims of twelve jars that have recently been unearthed. They are reduced to one-fifth the size of the originals. In addition to what has been said of these, it may be well to notice the forms of several. That at the extreme left, and the one at the corner in the foreground on the right, in form and decoration furnish examples of square-topped jars that appear to have been much liked by the former occupants of this region, for among our fragments those of this shape are quite common, and they are almost always decorated with obliquely arranged lines and the annular figures shown in two of the bits on plate XXXV, and especially on the nearly entire jar shown on plate XXXVI. A very unusual form of rim is shown in what was evidently one of the smaller jars, the second from the left in figure *a* of plate XXXVI. In this vessel the rim was oval at the top, the shorter diameter being four and three-fourths inches across, and the longer six inches at least. At each end of the long diameter the rim is pushed in, as shown in the figure; that is, it was probably so, for only half of the entire rim is present. Presumably, however, the lacking side was like that shown.

Nearly all the fragments of each of the jars represented by the three large fragments at the back of figure *a* were collected, but the edges were too imperfect to admit of restoration.

As has been mentioned, the three entire jars shown on plate XXXVI are all that now exist of those found in Vermont. Only one of these, the smaller and more highly ornamented one, was found near Lake Champlain. The other two were obtained in Bolton, a town situated east of the lake, and the jars were found not together although in the same town, about twenty miles east from the shore.[1] The smaller and finer jar was found not more than

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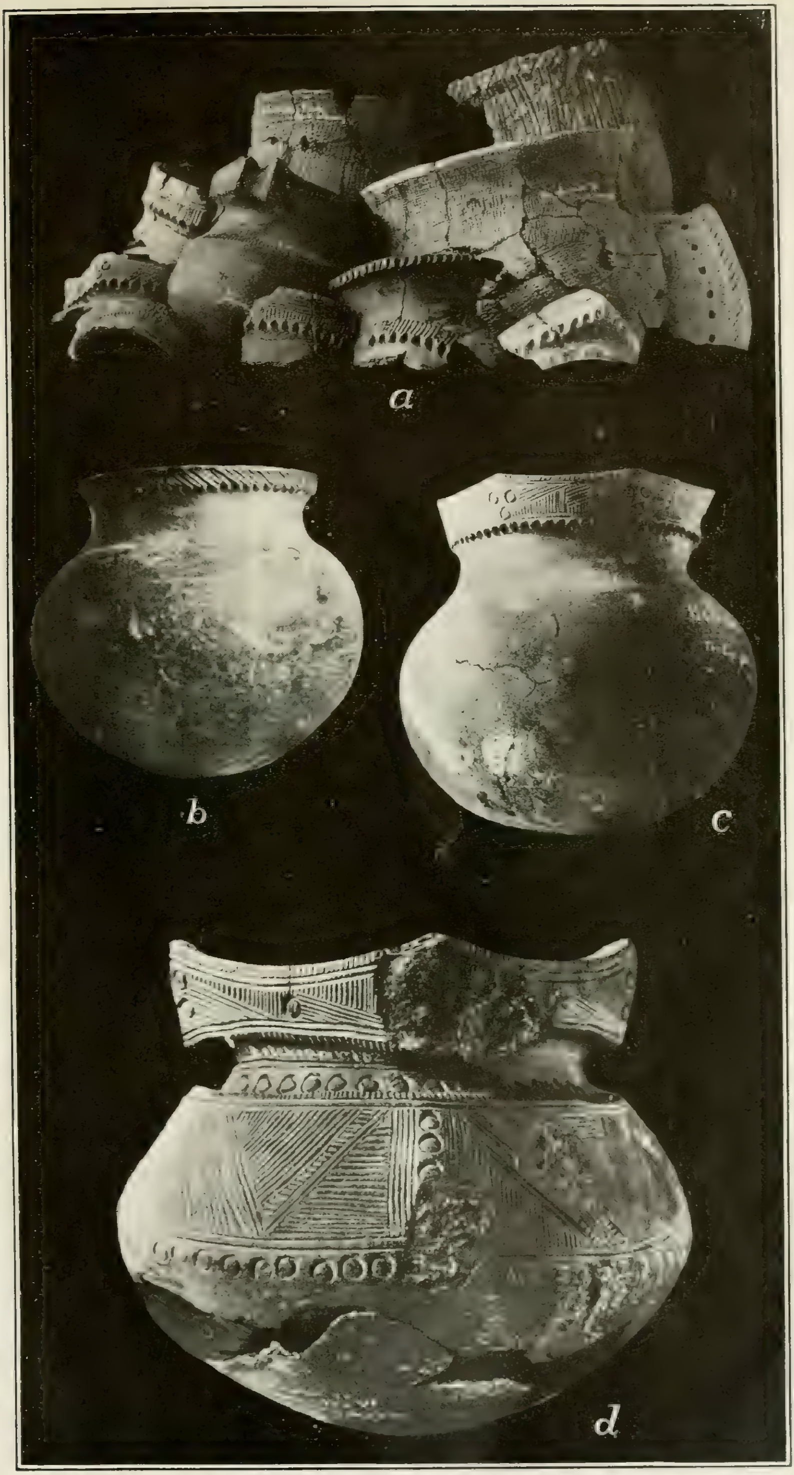
[1] It should be noted that the jars shown in figures *b* and *c* are really much larger than that represented by *d*, but in the plate this latter is reduced less, and therefore the figure is larger.



POTTERY FROM CHAMPLAIN VALLEY

two or three miles east of the lake and about six miles north of Burlington. It was unearthed in 1885 and ever since has been one of the most interesting objects in the Museum at Burlington. The present writer described and figured this specimen some years ago, and figures of it have appeared in several works ; but as all of these were from rather unsatisfactory pen drawings, it has been thought that an illustration from a direct photograph would not be superfluous.

The vessel is shown about one-fourth size. As it stands the height is seven and a half inches ; inside diameter at the top, five inches ; circumference at the largest part, twenty-seven inches. When filled it holds nine pints. No other entire jar so elaborately ornamented as this has been found in New England, although, as several of the fragments show, similarly elaborate jars were not extremely rare in the Champlain valley. At least the squaring of the rim does not seem uncommon, but probably few were squared below the neck as in this example.

The larger jar shown on plate XXXVI, which has about the six-sided rim the same sort of arrangement of lines and circles, was found in 1895. It was partially uncovered, sheltered by a sort of cave formed by large fallen rocks in a woods away from the general route of travel. It is remarkable that so perfect a specimen should have remained so long undiscovered, even in the out-of-the-way place where it was hidden. Whatever may be the explanation of this, no one can doubt the genuineness of the jar. The figure shows this specimen about one-fourth full size. The original is ten inches high, nine inches across the rim, and thirty-seven inches in circumference at the largest part. Its capacity is twelve quarts. The hexagonal rim is unusual, but not unique, for fragments of five- and six-sided rims have sometimes been found.

The third jar shown was found about the same time as that first mentioned, but within a mile or so, as nearly as I can ascertain, of the second. It is not necessary to call attention to its obvious simplicity as compared with either of the others. It is of about the same size as that of the other Bolton jar, being nine inches and a half high, seven and a half across the rim, thirty-eight inches in greatest circumference, and holds nearly fourteen quarts.

Besides jars, pipes of earthenware are now and then found in this region. These appear to be more common on the western than on the eastern side of Lake Champlain. They are usually of finer material and smoother surface than the jars, and either plain or very little ornamented. Some are straight, or nearly so, and flaring at the end. Others have the bowl at an angle with the stem, and resemble some of the modern pipes.

COPPER

As would be expected, copper articles are not common in the Champlain valley; yet quite a variety has been found, and a few are shown on plate XXXVII. In both the Vermont collections there are not more than twenty-five. The material in all cases is the native metal of Lake Superior, from which the objects were hammered into the desired forms.

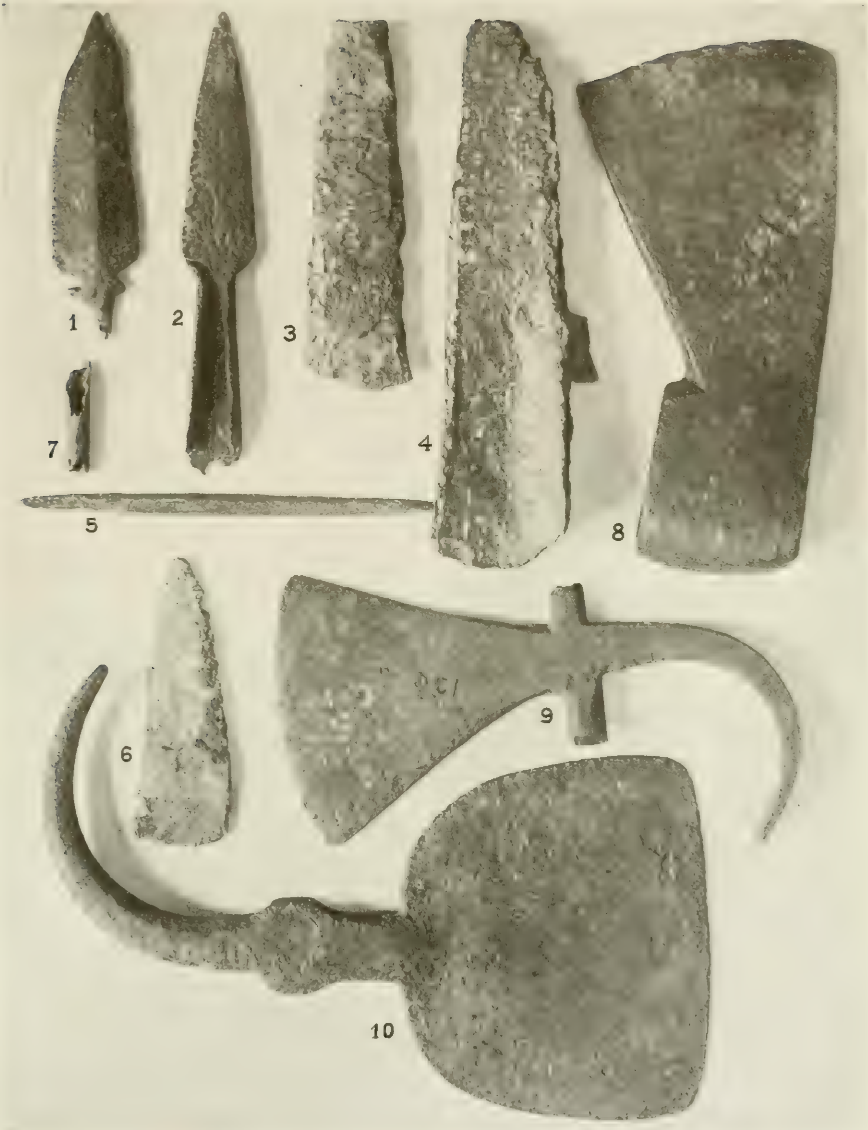
In some localities lumps of copper have been found, but here only the well-wrought implements, etc., have occurred. Figures 1 and 2 of the plate show two examples of spear-points or knives. Almost all our specimens of this kind are flat on one side and beveled from a medium ridge on the other, as the figures show, opposite sides being seen. The length varies from two inches and a half to six inches. Several have a sort of socket like that shown in figure 2. Celts like those illustrated by figures 3 and 6 are occasionally obtained, and one of these, found at the mouth of Otter creek, is the largest copper specimen found in the Champlain valley. This is not figured, and is much larger than any of those shown on the plate, being eight inches long, more than two inches wide, and an inch thick at the back ridge. It weighs thirty-eight ounces.

The celt shown by figure 3 is four inches and a half long and weighs five ounces and a half. The other is about two-thirds as large.

The only copper gouge found here is that seen in figure 4. The original is finely patinated; it is six inches and a half long, an inch and a half wide, and weighs thirteen ounces.

Figure 5 illustrates a copper bar similar to several that have been found in old graves at Swanton. That shown is very nicely shaped and was probably an ornament.

Figure 7 is one of a dozen copper beads, made by rolling sheet copper into cylinders, as shown.



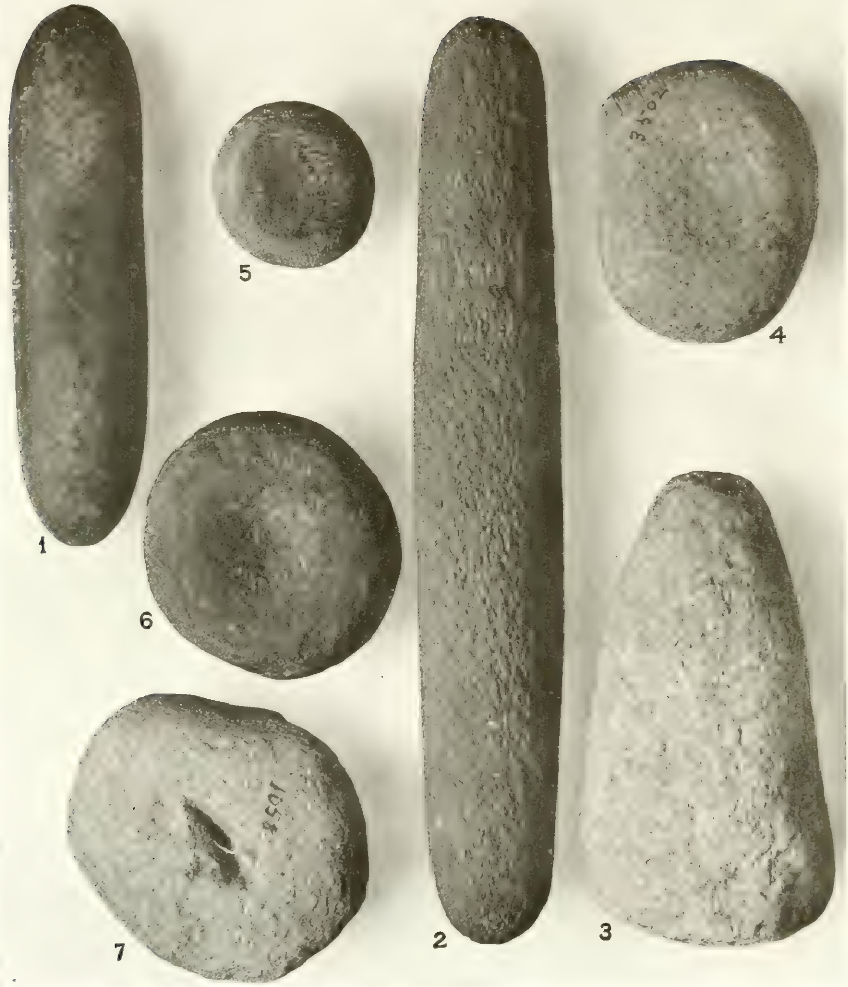
ABORIGINAL AND TRADE IMPLEMENTS OF IRON FROM CHAMPLAIN VALLEY

IRON

Although not aboriginal in origin, nor prehistoric in time, the implements used in trading with the Indians when Europeans first came into the Champlain valley and which soon largely displaced the laboriously fashioned and less efficient stone tools that for centuries had been the only aids the aborigines had in doing whatever tasks they undertook, are not without interest. A few of the more common forms are shown on plate XXXVII, figures 8, 9, 10. As will at once be seen, these are all different in form from similar tools in use later. Just how long these "trade axes" were used or why they were shaped as they are is not easily explained. Some of them are like those once used by the white men themselves, but many were evidently made expressly for the Indian trade. Here the most common form of trade axe is that shown in figure 8. Axes of this shape have been found in every part of this valley, and of sizes varying from those that were merely small hatchets to those measuring six or eight inches long. None have been found that are as heavy as the common axe of to-day. The forms with curved point on the back, as in figures 9 and 10, are much less common; and still more rare is the occasional specimen in which the back is fashioned into a pipe bowl, a form which in both ancient and modern times occurs in stone pipes, or rather "pipe-tomahawks."

In a subsequent article the writer hopes to consider other varieties of objects that have been collected in the Champlain valley, as pipes, ceremonial stones, plummet-stones, pestles, grooved axes, etc.

UNIVERSITY OF VERMONT
BURLINGTON, VERMONT



STONE IMPLEMENTS FROM THE CHAMPLAIN VALLEY

(One-half size.)

[Reprinted from the AMERICAN ANTHROPOLOGIST, Vol. 14, No. 1, Jan.-March, 1912.]

ABORIGINAL REMAINS IN THE CHAMPLAIN VALLEY

THIRD PAPER

BY G. H. PERKINS

IN the two papers preceding this[1] the writer has attempted to describe and figure many of the most characteristic objects that have been found and preserved in the region usually included in the Champlain valley. Here, as elsewhere, some extremely valuable articles, notably those of earthenware, have been lost or destroyed by ignorant finders, but there has been some advantage in this ignorance, for, because few have understood the value of the strange objects which have been exposed by plow or spade, there has been no attempt at deception in regard to them, and I do not think that the manufacture of "Indian relics" has ever been undertaken in this region. Hence we may feel quite sure that all the objects in our collections from the Champlain valley are what they are represented to be.

Probably because of the meeting in this valley of Algonkin and Iroquois and the occupancy of now one site and then another by families of one or the other of these peoples, we find considerable variety in the stone and other objects found.

Besides the specimens mentioned in the former papers there remain several kinds which should be added to the list, or it will be quite incomplete. As will be seen, some of the implements to be noticed are among the most conspicuous in our collections.

HAMMER-STONES AND PESTLES

Hammer or pounding stones are more abundant in this region than any other class of objects except those chipped from quartzite, although much less widely distributed than the latter. Naturally, implements used in pounding would be largely confined to camp or village sites where a stay of some duration was made. In a region strewn by drift furnishing bowlders of all sizes and of hard material, these would supply the need for such implements as those named. No artificial shaping could improve the form of many of the drift stones, and, while pounders were not infrequently made from small blocks of quartz or similar stone which were chipped or flaked, by far the greater number were simply the drift pebbles worked very little or not at all. They are of all sizes and weights, from a few ounces to several pounds. It is noticeable that while the flaked specimens are nearly or quite spherical, those pebbles used as hammers are more often oval and flattened on two sides. Most of these, as in other localities, are marked as hammers only, but conclusively such by the abrasion of the ends.

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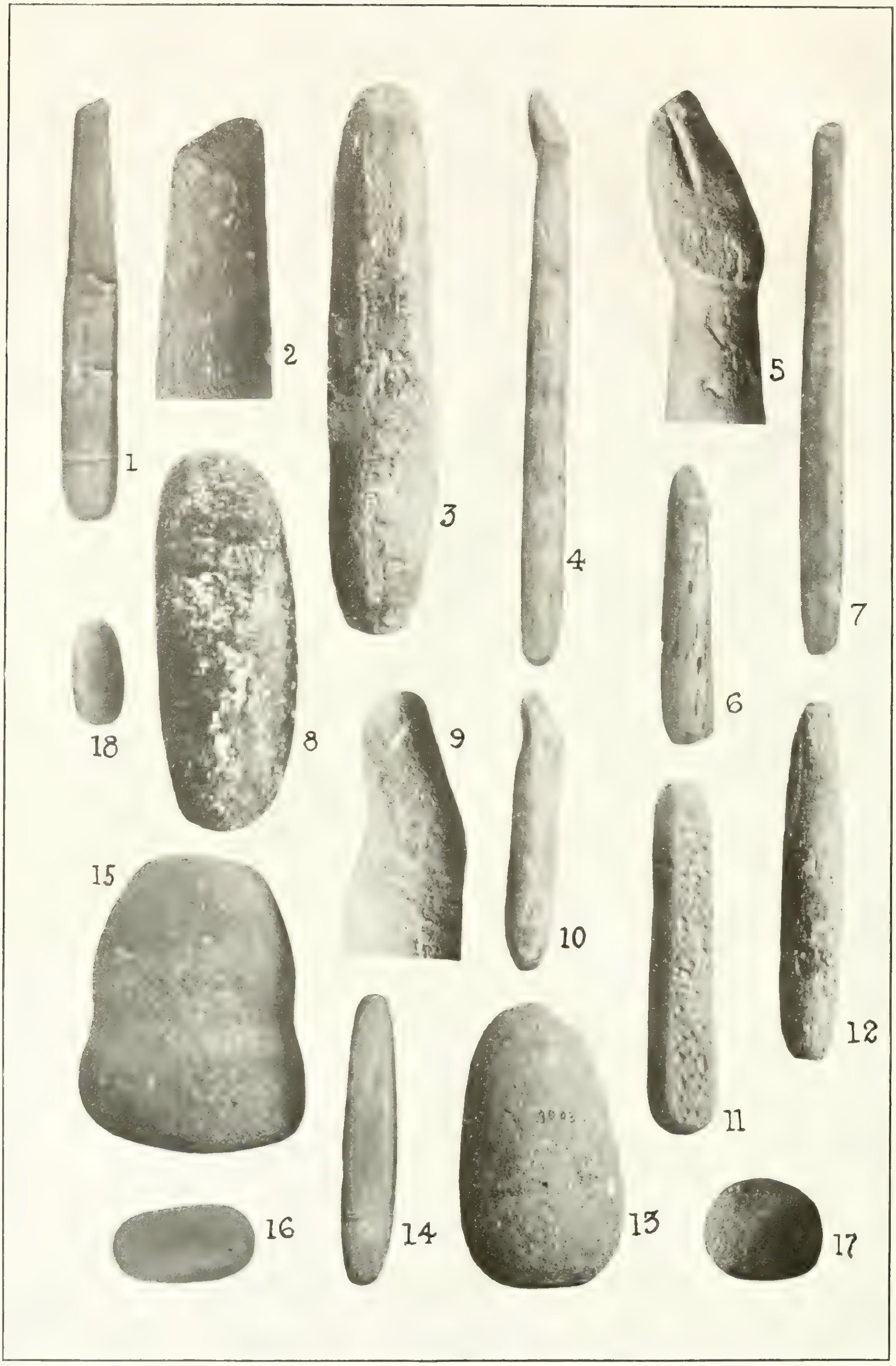
[1] *American Anthropologist*, N. S., vol. XI, 607; vol. XIII, p. 239.

While there would seem to be no necessity for putting work into an article that could be picked up ready made, we do find now and then specimens that are worked all over.

Pl. I, 4, 6, and pl. II, 17, show some of the rudest specimens, as does pl. II, 18, though the last seems less rude, as the quartz pebbles used were very smooth and regular when taken. From these wholly unworked pounders we find in the same locality various grades to those like pl. II, 6, which are not only smoothed over the whole surface, but cupped on each side in order to insure a firmer hold. Few of our pounders are as small as that shown in pl. II, 18, but occasionally such little specimens—only three inches long and of small weight—are found. Stones similar in form to that shown in fig. 6 are found which bear no mark of abrasion and which may well have served as small mortars. Whatever their use, these cupped stones are always carefully made. From the simplest forms, like that of pl. I, 4, there may be found in our collections a regular series until we have the larger pounders like that shown in fig. 3, and the one more carefully finished in pl. II, 13, and finally those grooved for the attachment of a handle as in pl. II, 15.

As may be noticed, the last form is very much like the meat pounders used until recently by the Dakota. These Indians attached a handle by means of a piece of rawhide, which covered the stick used and was carried about the groove in the stone. Evidently this rawhide was put on when wet and shrunk to a tight fit when



PESTLES AND CLUBS FROM THE CHAMPLAIN VALLEY

(1, 4, 6, 7, 10, about one-ninth size; the other figures are one-third size) dry. It is possible this may have been the ancient method as well. While on the one hand the oval or globular hammer developed into the pounder, like pl. II, 15, the more cylindrical pebble like pl. II, 8, in which only the ends are worked, developed into the carefully wrought implement such as that shown by pl. I, 2. Long, cylindrical pebbles, such as pl. II, 8, are not common, and the long pestle was most often made from a bit of stone broken from a larger piece. Much labor must needs have been expended in fashioning such an angular fragment into the regular and well-finished specimen.

Pl. I, 1, 2, and pl. II, 3, 14, show examples of our ordinary pestles of the better sort. The material as well as the size of these pestles varies greatly, but necessarily only hard stone could be used. The average specimens are twelve to fifteen inches long and weigh from eight to ten pounds. The largest that have been found exceed two feet in length, and weigh twenty to twenty-seven pounds.

The pestle shown by pl. II, 11, is of hard limestone. Two sides are carefully smoothed, two left untouched as the prints of fossils show.

Pl. II, 1, 2, 4–7, 9, 10, are what have been called effigy pestles. They are all rounded at one end and carved in the likeness of animal heads at the other. It may be noted that the illustrations do not show the form of the head in all cases as well as might be desired. In the actual specimens the form of the head is often more distinct than in the figures given. For several reasons I am inclined to regard these as clubs rather than pestles. They are more slender and therefore more easily broken than the undoubted pestles; they are of softer material, and they show little sign of use.

Some, as pl. II, 4, 7, are very long. That shown in fig. 4, of light-green mica schist, is twenty-seven inches in length and nowhere more than two inches in diameter. Fig. 7 is nearly as long. The upper end of 4 is carved to represent a head shown better in fig. 5. This is the best specimen of this sort found; but a considerable number of others, more or less well done, have been recovered.

The difference in form, and also in other respects, between these Champlain valley pestles and those from the Mississippi valley or farther west will be apparent to anyone familiar with the western forms. Pestles are not abundant in this region, and it is remarkable that this is true, for, when settled at least, each Indian family must have needed a mortar and its related pestle for the preparation of their daily food. When the size and durability of such implements as these are considered, it seems almost certain that if they really were as common as might be expected, many more of them would be found.

Among those specimens that at first sight appear to be allied with hammers are some forms not very common, but still not especially rare, which are very puzzling.

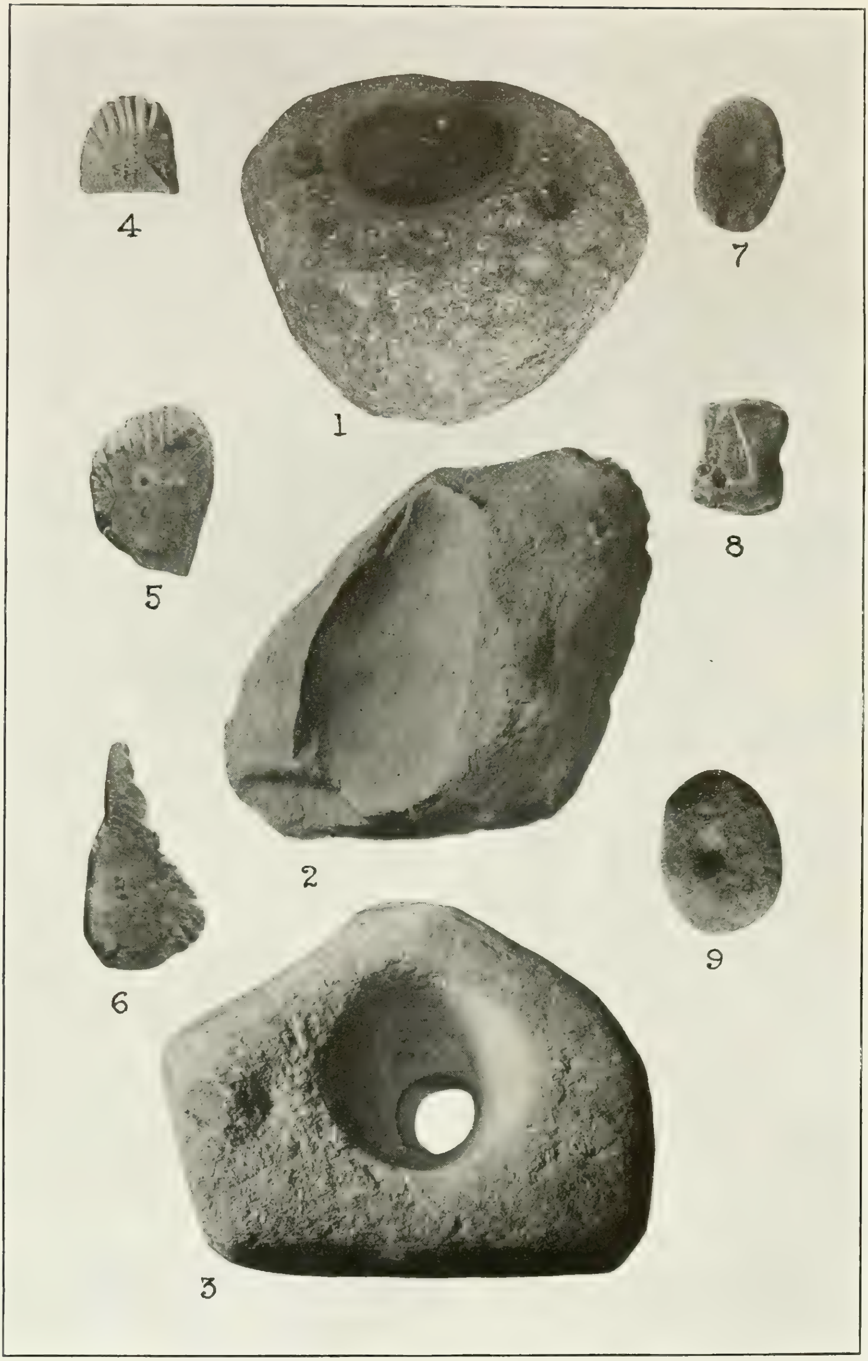
Pl. I, 5, 7, are of this sort. The specimen shown in fig. 5 is much more carefully made than is usual in hammers. The illustration does not show fully the difference between such an object and that shown in fig. 6, but the smaller specimen is much more elaborately shaped and its surface is smoothed on every part. As in the case of fig. 5, these finer objects are smaller than the hammers. The upper and lower surfaces may be cupped, though not deeply, or flat, and the edges are evenly beveled, as is not too well shown in fig. 5, so that there is a sharp ridge about the middle. It seems more probable that these specimens were more closely allied to the discoidal or chungke stones than to hammers; that is, they were for use in playing games.

More problematical is the specimen shown in fig. 7 of pl. I. Stones of this sort occur of various sizes: some are quite large, few smaller than fig. 7, which exceeds three inches in its long diameter, being shown about half its full size. Some of these are quite rude, others, as in the figure, are more or less smoothed over the entire surface. The material is usually hard and gritty, and the hollow is of the form seen in the figure.

It would seem most likely that such stones were used in sharpening bone awls, or some such instruments, or at first in shaping the points.

BOILING STONES

Stones precisely like the hammer-stones in form are frequently found in the same localities, that is about any camp site. Obviously, the same drift pebbles were selected for use as hammers or



MORTARS, ETC., CHAMPLAIN VALLEY

(1 and 3 about one-fifth size; 2 about one-ninth size; the others one-fourth)

to be heated and put into pots of water in order to cook whatever might be needed. As was shown in the first of these articles, nearly all the vessels used by the aborigines were of earthenware, and these were for the greater part too fragile to endure long suspension over the camp-fire. As is well known, cooking was accomplished in such pots, without placing them over the fire, by putting hot stones into the water they contained. The abraded ends mark the hammer, and the reddened and cracked surface marks the boiling stone. None of these are as large as the largest pounders, and they are more uniform in size. Of course similar stones that chanced to be about the fire would show the same signs, though not used.

MORTARS

As has been intimated in speaking of pestles, mortars are not at all abundant in the Champlain valley. This is difficult to explain, for if any of the implements and utensils of the aborigines were to endure and be easily found in later times, none would appear to be so likely to exist intact to the present time as these. Nevertheless, I have seen not more than a dozen or so. Some of the larger mortars, either whole or broken, were used in building stone walls as any suitably sized stones would be used, but this can account for only a small number.

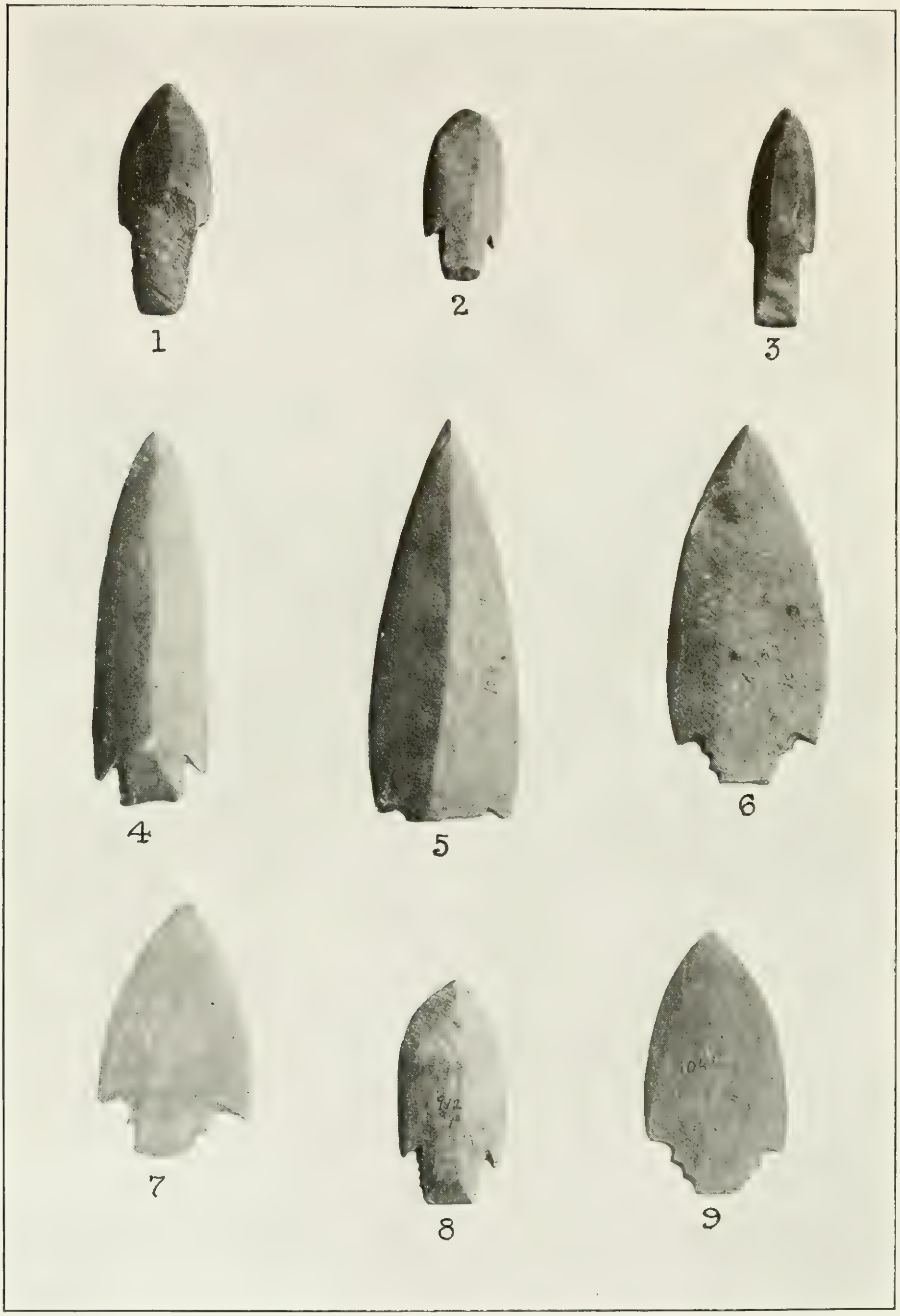
Pl. III shows three of the best of our mortars. As in case of these, each specimen is in some respects unlike any others. Of the three figures, 1 and 3 are shown about one-fifth full size, and fig. 2 one-ninth. The latter is one of the largest that has been found here. All exhibit the result of much labor, not merely in the excavation but also in shaping and smoothing the whole surface.

Fig. 1 of the plate was made from a small bowlder of reddish granite that was found in the drift. Whether its form is as found, or more or less hammered to its present shape, cannot be determined with certainty, but in portions of its surface it has evidently been rubbed artificially and the entire surface is smooth as if water-worn; but of course this would be the case in any drift rock. The cavity shown is very well shaped; it is five inches in diameter and two and a half deep. On the opposite side of the stone is a similar cavity, but somewhat larger than that shown. What particular advantage there was in having a hollow on both sides of the stone, when only one could be used at a time, is not evident. Another noticeable feature is seen in the small cup-like cavity on each side of the large one. Stones like that seen in fig. 9, in which there is only one small cavity, are not uncommon. To these reference will be made later.

Fig. 2 shows one of our largest mortars. It was shaped from a large piece of flat stone, as seen in the figure. The material is gray quartzite; the greatest length of the object is 27 inches, width 17, and thickness 4 to 5½. The unusual form of the excavation makes this mortar a connecting link between the regular mortar and the flat metate. This cavity is 15 × 10 inches, and where deepest it is 4 inches. The weight approximates fifty pounds.

In fig. 3 is shown another form, fashioned from a large piece of greenish sandstone, much like that from which ordinary grindstones are made. As the figure shows, the cavity is deep and regular, and has no bottom. Apparently after the side shown was finished, some one, either carelessly or because the stone was turned down on the side seen, began to make a cavity on the opposite side, breaking through into that already made. The surface has been rubbed and somewhat shaped. This mortar is 14 inches long and 9 inches wide. The greatest thickness is 3½ inches. The cavity seen is 5 inches in diameter. A small depression at the left of the large cavity will be noticed. In this specimen, besides the shallow excavation on the side not shown, which broke into the completed one, there is another at the left end of the mass, which, though not very deep, has about the same diameter as that shown.

Stones or bits of ledges, which bear only small cavities like those at the sides of the larger ones, or the cavity shown in the small stone in pl. III, fig. 9, are not uncommon. Sometimes a flattish piece of stone, five or six inches in diameter, has only one, or it may be two or three, of these little cups or cavities an inch or so across and usually but a fraction of an inch deep.



SLATE KNIVES, CHAMPLAIN VALLEY

(One-half size)

SINKERS

Pl. III, figs. 7, 8, show two examples of objects common in certain localities, but not widely distributed. They occur near lakes or large ponds, but nowhere else. The usual supposition that they were used for sinkers attached to nets or large lines seems most probable. They are generally merely flat bits of stone or flat pebbles notched on each side, but with little other evidence of having been worked. They are three or four inches long. Occasionally is found one of these sinkers that is more carefully made and is smoothed over the whole surface.

SINEW STONES

Pl. III, 4, 5, 6, illustrate peculiar grooved stones such as those which in other localities have been called "sinew stones," designed for use in preparing cord from sinews of animals. They are of hard, compact material, and are generally well made, though there is no attempt at ornament. All of our specimens are flat and at one end always rounded, as seen in the figures. Such objects are not very uncommon in the Champlain valley.

OBJECTS OF SLATE

In the first of this series of articles slate knives and points are mentioned, and four of them are figured on one of the plates. At that time there was no intention of considering these implements further, or the whole matter would have been left for the present paper, so that all might have been considered together. On looking over our collections, so many of these slate knives, etc., have been noticed that it seems worth while to give them more extended notice. The specimens first figured[1] are similar but not the same as those shown on pl. IV and V.

While these slate knives are by no means confined to the Champlain valley, but are found north in Canada, west in New York, and, rarely, in Maine, they are yet among our most characteristic specimens, and are probably more abundant and varied here than elsewhere. With some exceptions these implements are always hafted, often barbed, and usually notched along each side of the shank or haft. The figures on pls. IV and V illustrate a fairly full series of the different forms that have been found. They are almost always regular in shape and smoothly finished. The variously colored slate—red, purple, or drab—from which they are made is found abundantly in place in western Vermont and adjacent parts of New York, and is also not infrequently found in the drift along the shore of Lake Champlain, having been carried northward by the ice and currents of the lake.

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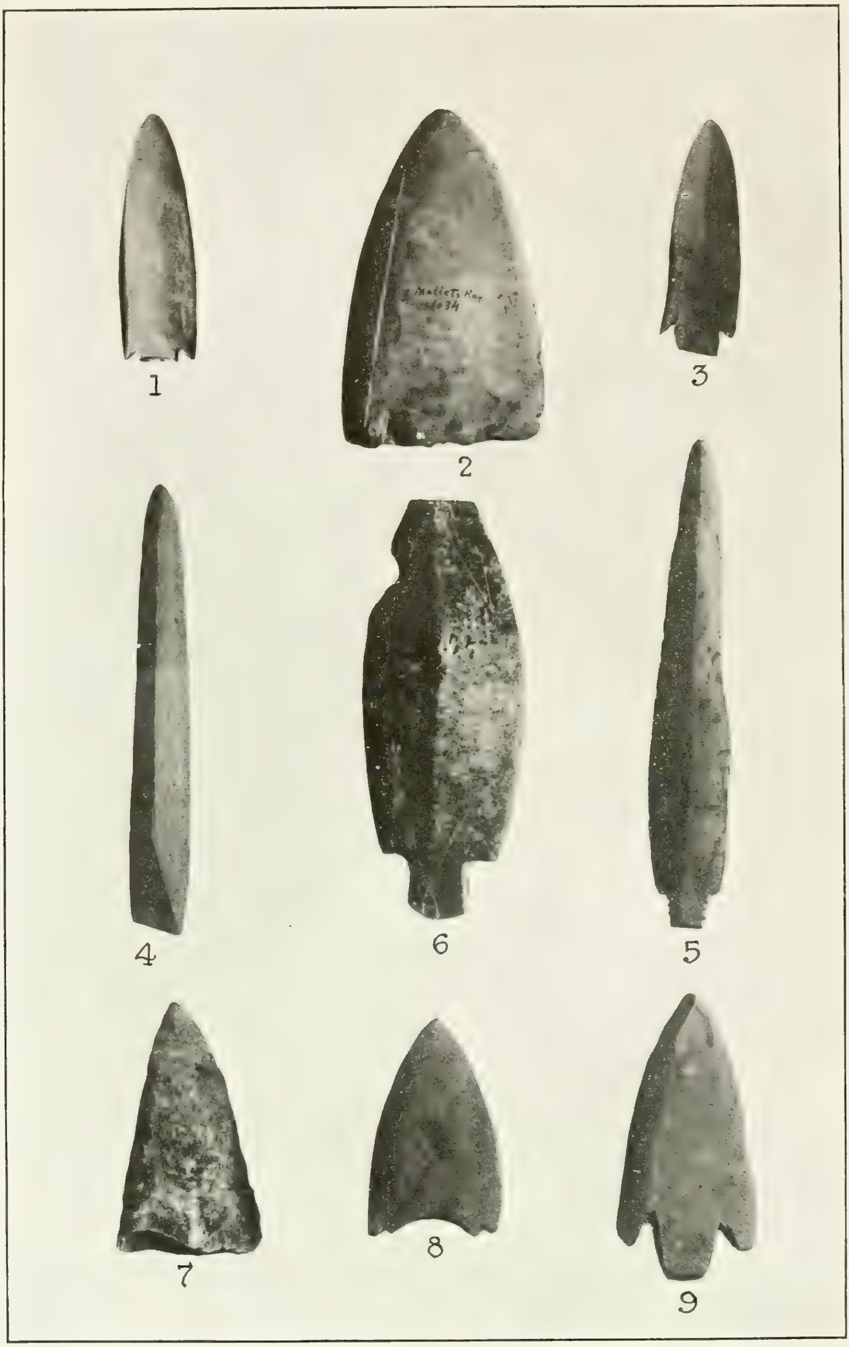
[1] *American Anthropologist*, N. S., vol. XI, pl. XXIX.

There have been found a few specimens that seem to have been only partly completed, and thus show that the bit of stone, ordinary roofing slate, was chipped into some semblance of the desired form and then rubbed with sand until smooth and in some cases polished. Usually the work was very well done; indeed none of the ordinary implements are so nicely shaped and smoothed as these. The edges are usually sharp; but in some specimens they are rounded, and apparently were never fitted for cutting.

The resemblance of these objects to some of the Eskimo knives has long since been noticed by various authors. Indeed, some have found sufficient similarity to suggest the idea that at some time there was an Eskimo migration or at least a visit to this region. Few will, I think, find convincing evidence of this in the presence of these slate knives.

It seems difficult to understand how many of these objects could have been serviceable as knives, though the form suggests this implement, for the material is too soft and fragile to endure hard use. Most of the specimens shown half-size on pl. IV are strong enough to have served as knives. The notched stems mentioned above can be readily seen in figs. 7, 8, and 9, and less distinctly in some of the others. As shown, some of the notches are large and few, others smaller and more numerous. Occasionally, as in fig. 3, the stem is not notched, but this is exceptional.

On pl. V, 1–7 (shown one-third size) are illustrated our largest examples of this kind. Such implements as that represented in fig. 2 of this plate may well have served as skin-dressers or for use in making pottery, but, like most of the rest, they are not hard



SLATE KNIVES, ETC., FROM THE CHAMPLAIN VALLEY

(1 to 7 one-third size; 8 and 9 one-half size)

enough for wood-working, and still less for working stone. The specimen shown in fig. 4 is one of the most perfectly finished that has been found; it is not only regular in shape, but finely polished. It is eight inches long and nowhere more than an inch wide. It has no haft, nor does it show any sign of use. The material is light-green slate. More slender is the specimen shown in fig. 5, which has suffered from exposure, but was probably as well finished originally as that illustrated in fig. 4. It is nine inches long, and at the widest part an inch and a half, though most of the blade is narrow. It is quite thin, and certainly could not have endured other than careful usage. As seen, there is a small haft, not very deeply notched, along the sides. Both of these objects may possibly be regarded as daggers, but it is not probable that either could have been used more than once. The implement shown in fig. 8 is peculiar, not only in the absence of a stem, but in the smoothly rounded lower edge. This, as well as fig. 9, is one-half size.

The specimen shown in fig. 6 is the only one of its kind that I have seen. The original form of the upper end is doubtful, as it is broken, but apparently it was pointed. It is figured more nearly full-size than the other specimens, being 3½ inches long and 3½ wide. Of course when complete it was somewhat longer—about 5 inches long, I should judge. The material is a light drab slate.

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ABORIGINAL REMAINS IN THE CHAMPLAIN VALLEY

SECOND PAPER

By G. H. PERKINS

IN a former paper, published in this Journal (vol. xi, pp. 607–623) the writer described a portion of the aboriginal remains which have been found in the region which may be fairly included in the Champlain Valley.

It is the design of the present paper and of another to follow to complete what has already been written by some account of several classes of objects not included in the first paper. It is important to preserve and discuss the specimens found in the region named, because, here, as indeed in many another locality, the accumulation of any considerable number and variety of stone and other objects that were made and used by the ancient occupants is no longer possible. This is eminently true of a long and well settled area and one much visited by tourists as is that here considered. As indicated in the first paper, the only collections of much value that have been made in the Champlain Valley are: that in the Museum of the University of Vermont, which is by far the most important, that in the state collection at Montpelier, and that at Amherst College, collected on the west side of the Valley by the late Dr Kellogg.

In the former paper there were considered, Chipped objects, Gouges, Celts, Earthenware, Bone, Copper and Iron. In the following pages there will be considered Grooved Axes, Problematical Stones—bird stones, two-hole stones, boat-shaped stones, etc.—and Pipes.

All of the specimens figured and most of those mentioned are now in the two Vermont museums.

GROOVED AXES

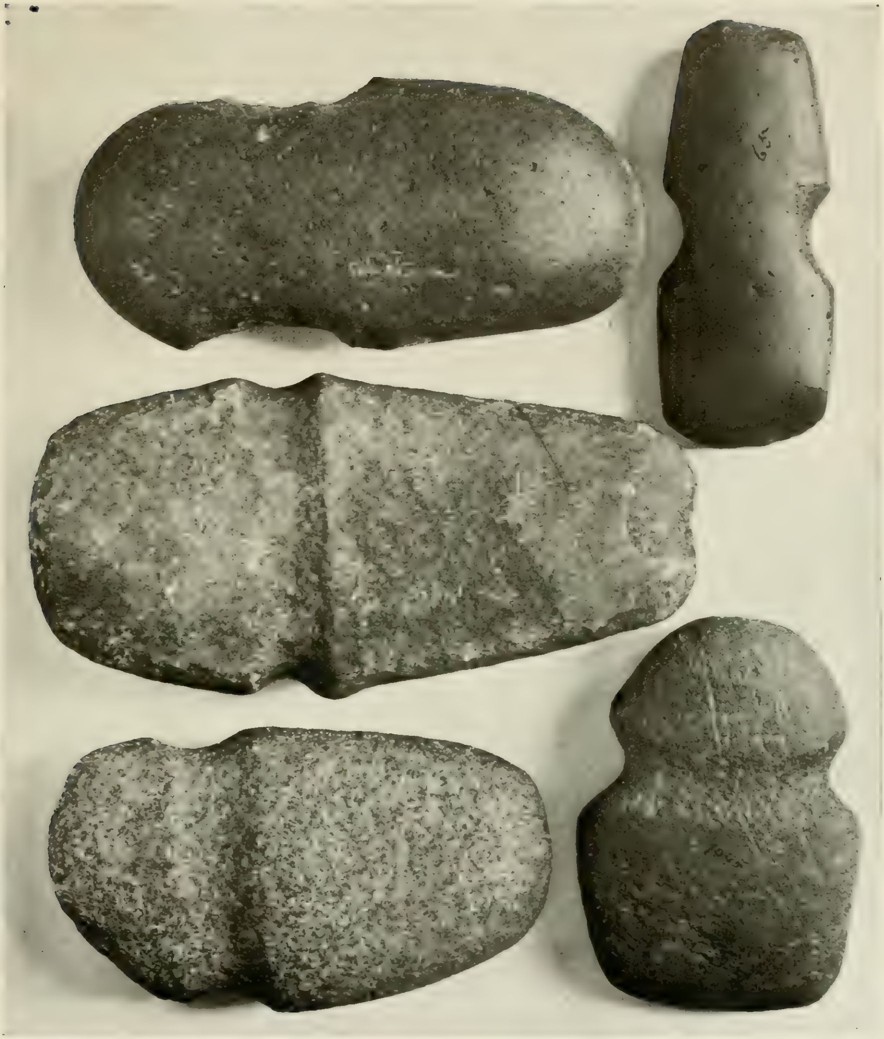
Grooved axes in a great variety of form and size, and of all degrees of elegance, have been obtained from the soil of this region.

Some are of the simplest and rudest character, shaped apparently with the least amount of labor while others equal our finest specimens in perfection of form and finish. Most of these axes are well made and give abundant evidence of the care and labor expended in their shaping from the flat, oval quartz pebbles from which they have been produced. The simplest are merely flat pieces of quartzite or other hard stone, even sandstone being occasionally used. Roughly shaped and notched only on the edges, these rude implements may have been often used as hammers rather than as axes and yet they have the ax form. Plate XII shows several forms and examples of the best of our Champlain Valley axes.

Most of these, as is true of all similar specimens, are so completely worked over the surface that it is not always possible to determine whether they were made from drift pebbles or from material broken from some nearby ledge. The specimen shown on the plate at the top, however, is very obviously made from a quartz pebble, water worn, and worked only so far as necessary to adapt it to its purpose. The smaller ax at the right of this is also obviously made from a pebble and probably also that at the lower right-hand corner, but the other two are not so plainly of the same sort. As the figures show, our better axes are ground or rubbed over the whole surface. At first, usually, the stone selected was hammered or pecked into the desired form and then rubbed smooth, but, when the ax was made from a pebble, the smooth, water worn surface was retained as far as possible. As the figures show, our axes differed materially in form from those of the west and south or even from those of the Ohio Valley. None are as large as some from these other localities nor do we ever find those in which the upper portion, that above the groove, is conical or pyramidal.

On the average, our axes are not more than six to eight inches long and three or four wide and they do not weight more than three or four pounds. Somewhat larger specimens occasionally occur, but none greatly exceed the dimensions given.

Clumsy and inefficient as these dull-edged tools seem to us they appear, nevertheless, to have been quite serviceable in the hands of those who knew how to use them. In speaking of a temporary encampment which his Algonkin companions made on one of the



GROOVED AXES FROM THE CHAMPLAIN VALLEY (REDUCED ONE-HALF)

large islands in the lake which bears his name, Champlain tells us that they built a barricade and cut "gros arbres" with "meschantes haches" for this purpose. As this was merely a stop of a single night it is not probable that these Indians wasted any great amount of labor upon the structure they had thought it necessary to make.

In all the best axes the groove is well defined and encircles the implement. As the figures show, the groove is sometimes near the middle, sometimes near the end opposite the edge. In the most perfect specimens the groove is as seen in the three lower figures of plate XII, but it may extend only across each end as in the two upper figures. It is rarely if ever made about three sides only, the fourth being left flat, as in specimens found in other places. I have seen but one specimen of this sort in our collections and this is doubtfully from this region.

Naturally, because of the labor of making them, the grooved axes are by no means as common as the celts. Indeed, finely wrought stone axes are among our least abundant specimens. In no part of this region have more than three or four been found in a single locality and usually only one or two.

PROBLEMATICAL OBJECTS

This name has been proposed, as it seems to me most wisely, to include a group of quite heterogeneous specimens, some of which may have been, and very probably were, used as amulets or charms, others as emblems of one sort or another, others as ornaments, while the design of some can not be conjectured with probability.

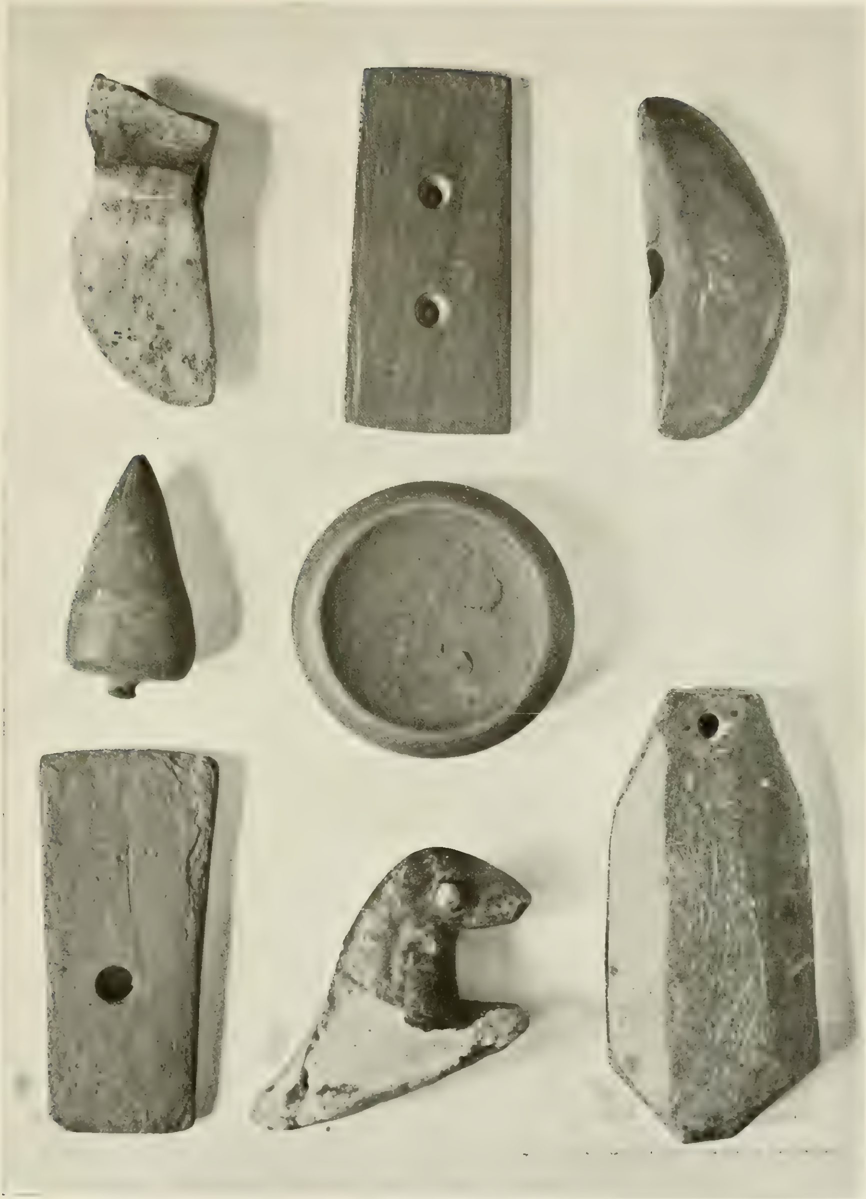
As every reader of archeological articles knows, a great variety of names have been assigned to these objects, some of them undoubtedly fanciful, others probably indicating the use to which this or that specimen was put. Some of these common names will be used, but without the intention of expressing thereby any certainty that the term applied is entirely correct. Unless found in an unfinished condition, these objects are all well shaped, finely finished, and were evidently considered by the makers of sufficient importance to be worthy of their best efforts.

The material of which they are made is usually fine in grain and attractive in color. The kind of objects of which I am writing is well exemplified in plates XIII–XV. The figures given on these plates show a large part of the best specimens of this class that have been found in the Champlain Valley. If this is true it follows that only a few have been obtained. It is probable that no large number of these objects was ever in existence, but that always they were the few cherished treasures of their owners. The plates show also how great a variety in form exists, and there is also variety in the color and character of the materials selected from which they were fashioned. All are of rather small size, only a few inches in length or breadth and usually much less in thickness.

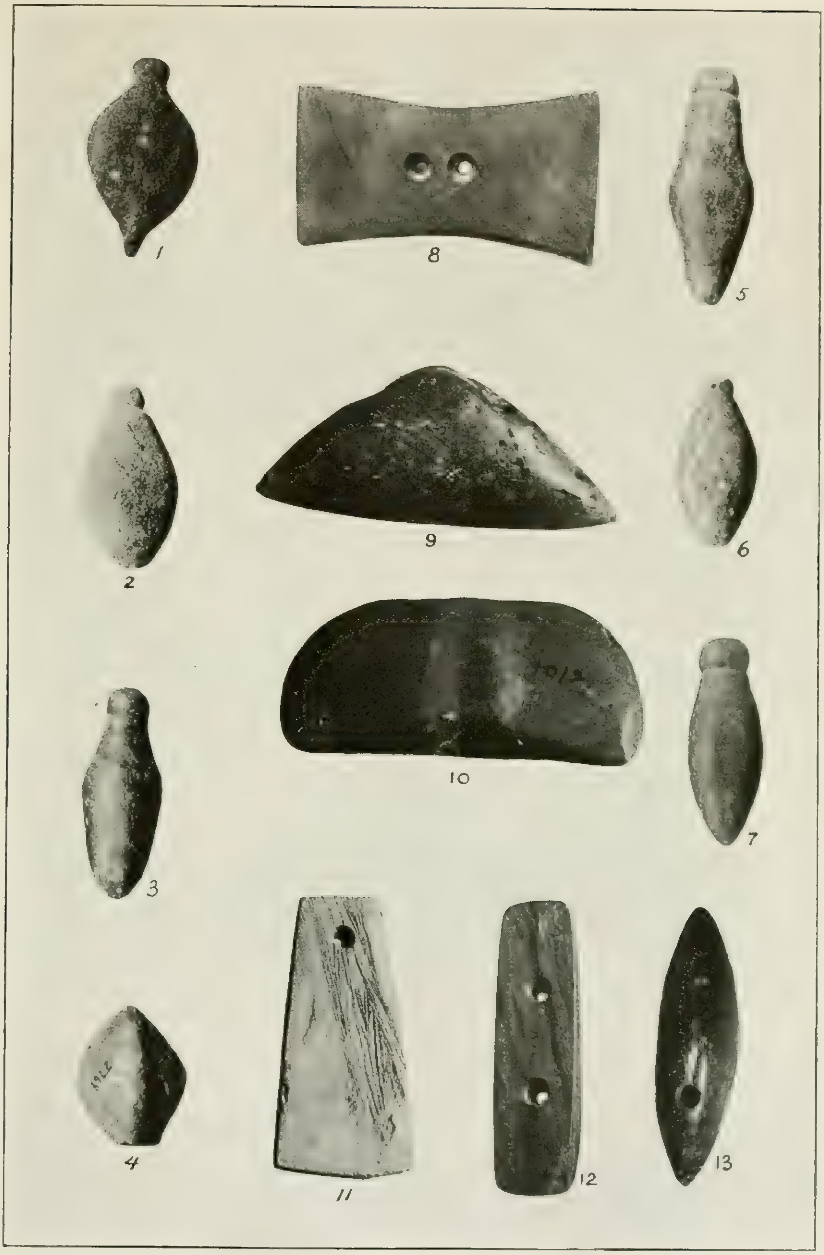
It is noticeable that none of our Champlain Valley specimens so closely resemble those of similar character found west or south as do these problematical forms. In many cases exact duplicates of specimens from mounds or graves, or from the surface soil, in the Ohio or Mississippi valleys or even on the Pacific Coast have been found here. From this it appears that these forms were more generally distributed and passed from tribe to tribe more commonly than other objects. It is also noticeable that while duplicates of our specimens are found in many and sometimes distant localities we find within our own area few duplicates, but rather some peculiarity in almost every specimen. While the general term "problematical stones" includes all the forms here mentioned, it will be convenient to subdivide the whole group, using well known names.

1. *Flat Perforated Stones or Pierced Tablets*

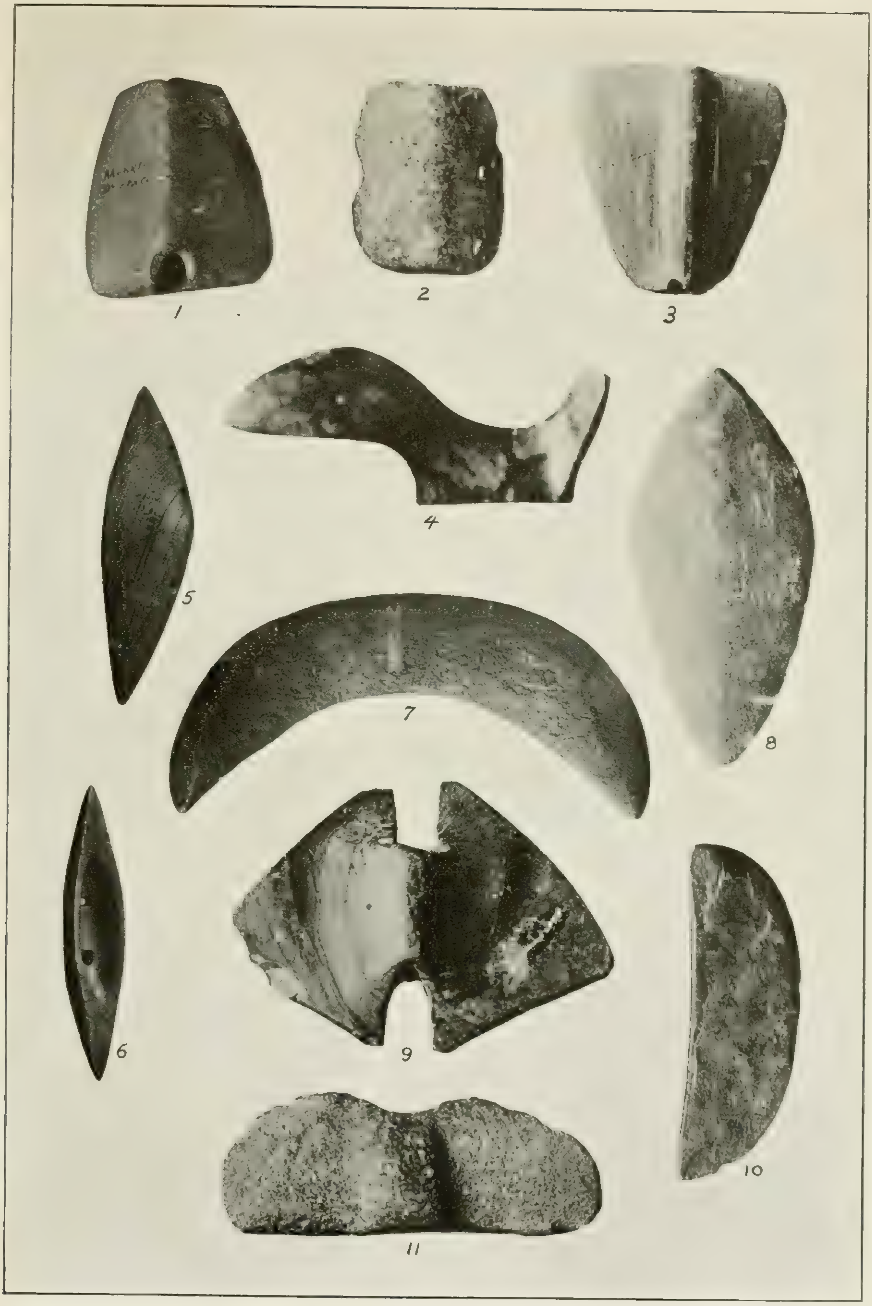
Regularly shaped pieces of slate, schist, etc., now and then occur in this region. Some of them may be incomplete and perhaps one or more holes would have been made had they been finished, but some appear finished as they are. Most of the flat specimens are perforated, as in the middle figure at the top, and the left figure at the bottom of plate XIII and figures 8, 11, 12 of plate XIV. Sometimes a little convex on one or both sides, these stones are more often quite flat and thin. As shown, there may be one or two holes, apparently for a thong by which the object could easily be hung or in some way attached to the person of the owner. In size these vary from six inches long, which is an unusual size, to two inches in length and about half as much in width. The specimens shown on



STONE AMULETS AND CEREMONIAL STONES FROM THE CHAMPLAIN VALLEY (ONE-HALF ACTUAL SIZE)



PENDANTS AND PROBLEMATICAL STONES FROM THE CHAMPLAIN VALLEY (REDUCED)



PROBLEMATICAL STONES FROM THE CHAMPLAIN VALLEY (REDUCED)

the plates are from one half to one third full size. In all, the hole or holes, there are never more than two, are reamed out on one side to about twice the diameter on the opposite side. The specimen figured at the bottom of plate XIII though thicker and heavier than other specimens may most properly be placed with those now under consideration. This, apparently a pendant, is of steatite, quite thick and, as may be seen, there is a wide bevel along each edge. The opposite side is flat.

2. *Winged Stones*

These are as carefully wrought as any specimens that we have. They are also about as rarely found as any. Figures at the top, corners of plate XIII, figure 10 of plate XIV and figures 1, 2, 3, and especially 9, of plate XV give good examples of these singular objects. They have been called, "ceremonial stones," "banner stones," etc. It has also been supposed by some that the large perforation seen in all these specimens was for the reception of a reed or handle of some sort in order that such an object might be used as a baton or scepter. Some of these are of comparatively soft stone, as slate or limestone, but some are of quartz or other very hard material and the difficulty of working these into shape must have been great. Whatever the purpose of these winged specimens they must have been considered of great importance by those who with so much labor worked them out. Most of the specimens figured are about half full size. The surface is always very smoothly ground and often polished. In some the sides are alike as they are in the upper figures on plate XIII. In other cases, one side is convex and the other concave, as in figure 2 of plate XV.

The specimen shown in figure 11 of plate XV is probably an incomplete form of those mentioned. It is of gray quartzite and in its present condition is quite rude. The specimens shown at the upper corners of plate XIII are quartz, 1, 3, 9 of plate XV are slate, while 2 is granite.

3. *Pick-shaped Stones*

One or two very rude examples of this form have been found, but only a single fine specimen, that shown in figure 7 of plate XV has been seen. This is perhaps unfinished. At any rate it is not smoothed over the surface as are most of the specimens of this sort. It is of green stone, well formed, but not perforated. The entire length of this specimen, measured from point to point, is 8¾ inches and its width in the middle is 1⅞ inches. The thickness in the middle, from which the surface is bevelled in both directions, is 1¾ inches.

Specimens of small pick-shaped stones almost exactly like those figured by Dr Beauchamp and made from the same striped drab and black slate are found here though rarely. They are apparently more common in New York where Dr Beauchamp's specimens were found.

4. Boat-shaped Stones

As has been repeatedly noticed of other problematical forms, boat-stones are rare in the Champlain Valley. Those specimens that do occur are of very fine material and elegantly formed and finished. Plate XV, figures 5 and 6, plate XIV, figures 9 and 13, are examples of these. That seen, very much reduced, on plate XIV is the largest that I have seen. It is made of a hard, gray, black lined, silicious stone. It is, as in all these specimens, excavated underneath and perforated by two holes. It is nearly 5½ inches long and, at the middle, 1½ inches high.

5. Bar Amulets

Objects that for lack of a better name have been called by that given are also found here. For some reason they are not as carefully made as are the boat-stones nor are they usually perforated. One found in a grave at Swanton made of red slate and more finely finished than any other has the two holes always seen in the boat-stones, but I do not remember that any other is perforated.

In size these bar-shaped stones vary greatly. Our largest specimen is 8½ inches long, 1¼ wide, and ¾ high in the middle, from which the surface slopes in both directions. The smallest is only 3¼ inches long and very slender. Most of these are flat on the under side and not at all excavated, but in one or two cases there is a small concavity.

6. Bird-Stones

Specimens which may be included under the above name are exceedingly uncommon in the Champlain Valley. The specimen shown in figure 4 of plate XV is unique here, for I have not seen another like it, though very similar forms are found west and south. The specimen figured is of a very pretty calcareous breccia, not very hard. It is perfectly shaped and finished, the surface is smooth, almost polished, all the edges are sharp, and there is no evidence of use. Through each end there is a small hole drilled obliquely so that it comes out below. This object is 4¼ inches long, and 2 inches high. The base is 1⅞ × ¾ inches and, as may be seen, is rectangular and flat. A more decided effigy is that shown at the bottom of plate XIII. This was found in one of the Swanton graves and the dark upper part is colored green by copper carbonate from implements which were buried in the same grave. Some of these are figured in the former paper. The material is a hard, light-colored limestone. The base is pierced by a hole at each end. The surface is somewhat eroded, but was evidently well polished originally. The base is 3.15 inches by 1.3 inches and the height from top of head 2.65 inches. In a neighboring grave another of these objects was found. This is of red slate and is of about the same size as that figured, but of somewhat different proportions, the base being longer and the head pointed at the end.

7. Pendants, Plummets

Much more frequently occurring in our finds than the objects already mentioned are stones such as those shown in the figure to the left of the discoidal on plate XIII and figures 1–7 on plate XIV. It is quite likely that most of these were used as ornaments and others for different purposes, the ruder forms perhaps as net or line sinkers. Many of these objects are exceedingly well made and could scarcely have been intended for common use. Yet some of them, while regularly and carefully shaped, are not as carefully smoothed as one would expect in an ornament. The material selected for these stones is as varied as is the form. Some are of hard silicious stone, some from that which is softer and schistose.

In size these specimens are more uniform than are most of our objects in any given class. They are none of them large, but average 3 or 3½ inches in length. Some are larger and the longest which I have seen is 4½ inches. Most are flattened on two sides, but some are nearly or quite cylindrical. The illustrations show well the different forms which have been found. The figures are rather less than one third full size.

8. Discoidal Stones

Only a single specimen of this sort has been found, unless we include several very rude specimens which we must suppose to be unfinished. This is figured in the center of plate XIII.

As the figure shows, this is a fine specimen of its kind. It is made from white quartz and is a most admirable piece of stonework. Each side is cupped, as seen in the figure, and the edges strongly convex. Its diameter is 2.75 inches and its thickness at the rim of the depression 1.1 inches. No such specimen has been found near the surface, this being taken from one of the graves explored many years ago at Swanton. Apparently these graves were very old, some of them being beneath large pine trees. Indeed this burial place was not discovered until the pine forest growing above it was cleared off and the sandy surface, being by the clearing exposed to the wind, was in places removed and graves disclosed. This led to careful examination of the locality and the discovery of a considerable number of specimens of stone with a few of copper and shell. The writer described this burial place some years ago in the Proceedings of the American Association for the Advancement of Science, vol. XXII, pp. 76–100.

It is quite possible that the specimens figured on plate XV, figs. 8 and 10, should not be classed with the rest of the objects shown on the plate, but they are certainly problematical forms. That shown by figure 8 is of drab slate. Its surface is smoothed, but not polished. It may have been some tool for smoothing earthenware or rubbing skins, or it may have been an ornament. Several have been found, all very much alike. They are not thin enough to be fragile, but are not clumsy. They are four or five inches long and two wide.

Figure 10 has the form of some of our slate knives, but this is of nearly uniform thickness throughout and there is no indication that an edge was contemplated by the maker. It is simply a thin, flat bit of red slate shaped as seen and ground smooth over the surface. The figure is about one half full size.

PIPES

On plates XVI and XVII there are figures of twelve of the stone pipes that have been found on the eastern side of the Champlain Valley. Other forms have been obtained on both sides of the lake, but the figures here shown will suffice to quite fully represent the forms found. As the writer has elsewhere described and figured several of the pipes of this region it will not be necessary to enlarge upon this part of the subject.

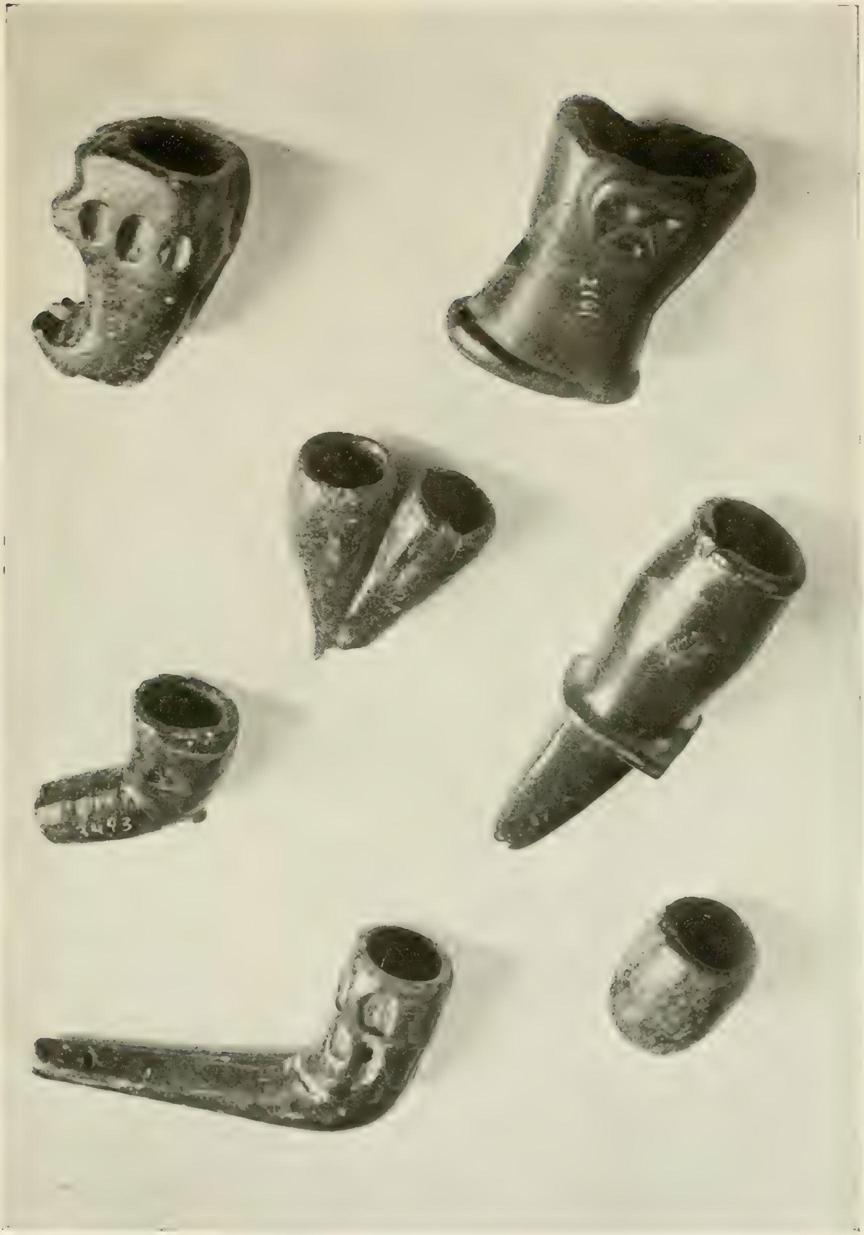
With the exception of the tubular pipes, of which an example is plate XVII, figure 1, all of our pipes are of quite small size, those figured being shown about half full size.

It is scarcely necessary to say that all are carefully and skilfully made. The material is mostly steatite, or other rather soft stone, as gypsum, of which the pipe in the lower left corner of plate XVI is made. This material is not found in this region, and like catlinite, one pipe of which has been found, it must have been brought from a distant locality. As will be noticed, three of the pipes figured are made with a stem as was most common in pipes of earthenware, as shown by figure 5, plate XVII, though other forms also are found in the earthenware pipes.

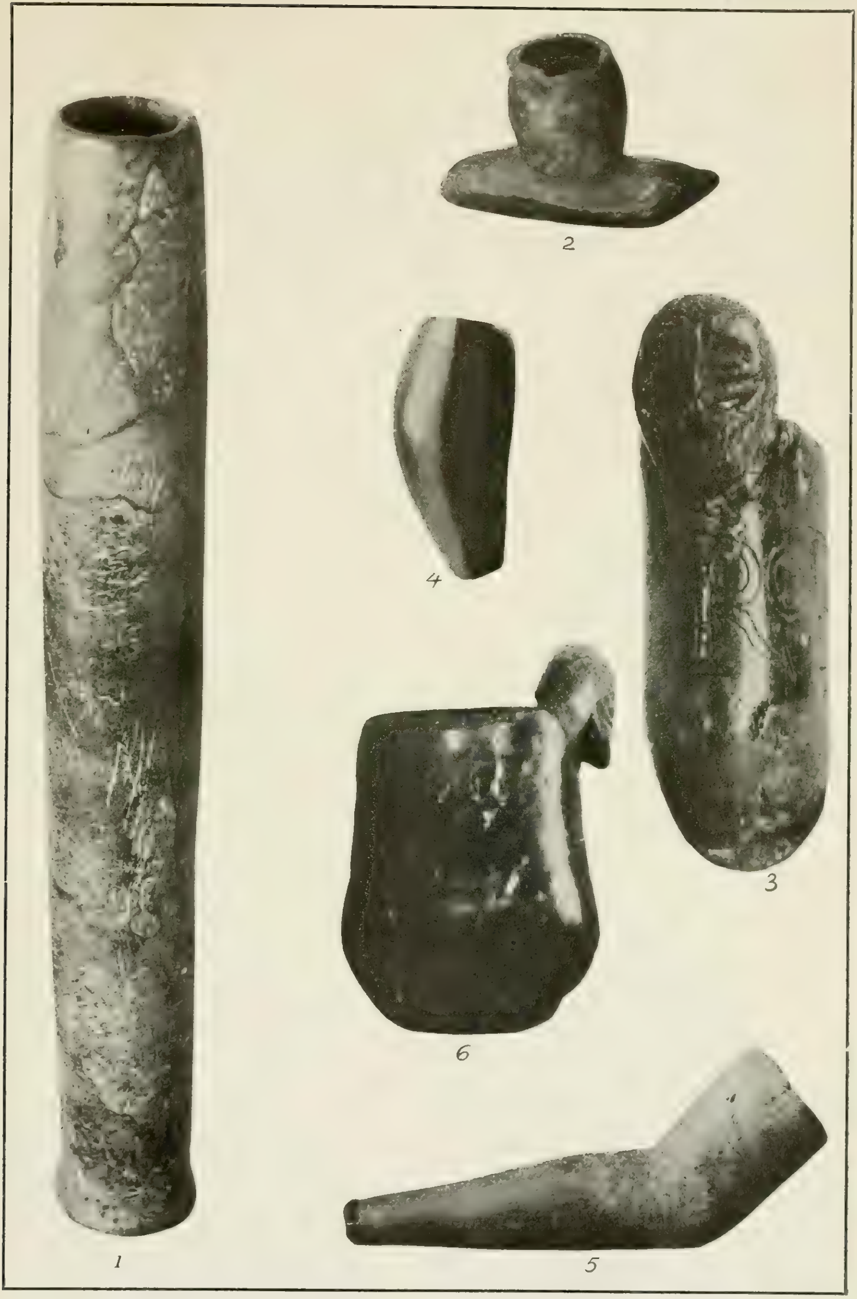
Only one platform pipe has been found, figure 2, on plate XVII. It is noticeable that the only attempts to imitate the human face that have been found in the Champlain Valley are seen in the two pipes figured on plates XVI and XVII. The face carved on the black steatite pipe shown on plate XVI is too rude to indicate much of the nationality of the model if there were any, but that shown on the pipe in figures 3 and 4 of plate XVII is evidently intended to represent a European. The face is rude, but nevertheless is not without considerable expression. So, too, the only animal effigy that I have seen from this region is that shown in the pipe at the upper left-hand corner of plate XVI. The almost entire absence of any such effigies in the Champlain Valley adds interest to these three specimens.

The pipe figured on plate XVII, figures 3 and 4, is of yellowish steatite wholly unlike any stone found in this vicinity. It is regrettable that it was not made from harder stone, for the finder has scratched letters upon it, much to its injury. Like several of the pipes it has near the lower edge a small hole apparently for suspension by a cord. The total height is 2¾ inches, width 1⅝ inches at the lower part, thickness at the top ¾ inch. It was found many years ago in Addison County and until lately has been an heirloom in the family of the finder. It is shown in figure 4, plate XVII, about three-fourths full size, while figure 3 is the same a little enlarged. Probably a hollow reed was the most common stem for these pipes, but the humerus or other long bone of some small bird was also used. I have a pipe from California in which the stem is still in place and it is a humerus of a bird about the size of a dove. I have spoken above of the use of catlinite pipes in this region. I know of only a single specimen. This is of larger size than any of those figured and is more modern in appearance, though it was plowed out of quite a depth of soil.

The remaining pipe, which is shown about two thirds full size in figure 1 of plate XVII, is of very peculiar form for an eastern specimen. On the Pacific Coast tubular pipes are not uncommon and here in a limited area on the eastern side of the Champlain Valley about a dozen have been found. They are all large, though varying in length from 13 inches to 7 inches. Most of this form have come from the graves in Swanton already mentioned, but a few have been found in other, but not distant, localities. As the figure shows, the bore at one end is as large as the size of the tube allows. At the opposite end the hole is reduced to half an inch in diameter and in several there was a loosely fitting stone plug. All are not exactly of the form of figure 1 of plate XVII but some are more like a ball club: others taper somewhat from the end where the bore is small. Still there is not great diversity in the appearance of all. It is interesting to note that besides the stone tubular pipes somewhat similar ones are found made of earthenware. Most of the pipes of earthenware, however, are shaped more like the stemmed forms as in figure 5 of plate XVII or those shown on plate XVI at the lower left hand. The first of these is of earthenware; all the others are stone.



STONE PIPES FROM THE CHAMPLAIN VALLEY (REDUCED ONE-HALF)



STONE PIPES FROM THE CHAMPLAIN VALLEY (3 FULL SIZE, OTHERS REDUCED)

Perhaps the writer may be allowed to add in closing that he has noticed the various specimens figured not because of any remarkable peculiarities they possess, but because they show something as to the nature and style of the objects used by the Iroquois and Algonkin occupants of the Champlain Valley. Specimens very nearly like those figured here have been found, and often in far greater number, in the west and south, as anyone may see by examining the collections of some of our museums or by consulting the numerous figures given in Mr Moorehead's most valuable *Stone Age*. From this it seems probable that most, at least, of the problematical forms had their origin outside of New England, and that either the objects themselves were imported from farther west, or those made elsewhere were imitated by the Indians of the Champlain Valley. Probably some of the forms originated here but the close resemblance of most to those found far more abundantly elsewhere suggests importation to a considerable extent.

It may be well to add that some of the tubular pipes and the last mentioned bird-stone are now in the American Museum of Natural History, New York City.

University of Vermont,
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Perkins, George Henry
Aboriginal remains in the Champlain Valley

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